ENCE LIBRARY

APR 20 1929

15 Cents

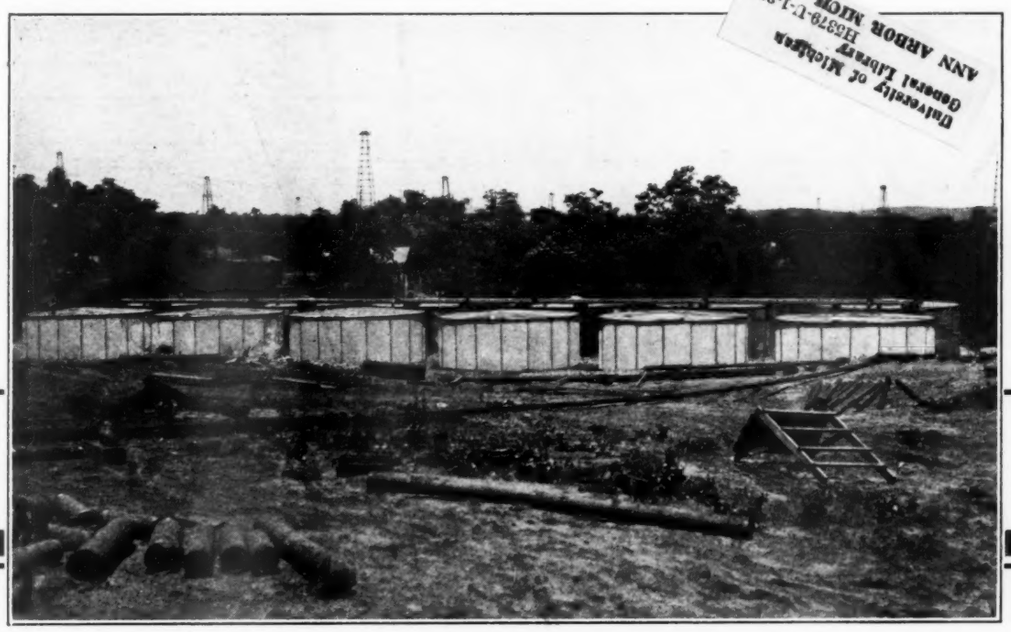
# The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

Published Every Thursday TULSA, OKLAHOMA, APRIL 18, 1929 $6.00 a Year

University of Michigan
General Library
H5379-T-1-23-30
ANN ARBOR MICH

MADE OF KEYSTONE COPPER STEEL



MADE OF KEYSTONE COPPER STEEL

## Maloney *Sales* Leadership is based on *Service* Leadership

MALONEYS are the leading sellers in so many fields because experienced buyers know that these tanks *serve longer,* due to their remarkable durability, and also *serve better,* because they are vapor-tight to an exceptional degree.

Major factors in the superior length and quality of MALONEY service include: Construction of highly rust-resisting Keystone Copper Steel; close-fitting crimped seams and joints, packed with our special gasketing and dressed with our Gaso cement; reinforcing of all seams, including deck seams, with rigid steel channels; use of bolts of 90,000 lbs. tensile strength; large cleaning out plates set flush with bottoms. Maloney Special Pearl Gray paint; the best obtainable valves and thief hatches.

The twelve 500-Bbl. Low Type Maloneys shown above are on the Tewee Farm, Carter Oil Co., Wolf, Okla.

*"Alone in Quality"*

MALONEY TANK MFG. COMPANY
Tulsa, Okla., U.S.A.
*Distributers at All Principal Petroleum Points*

*Howell Aluminum "4-in-1" Vacuum Pressure Valve and Thief Hatch—the BEST and LATEST Deck Equipment—POSITIVE Safety*

Sizes: 12 to 10,000 Barrels

Packed in Steel-Bound Crates for Export

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

Advertisers' Index on Page 25

Table of Contents on Page 26

# Busy Men often prefer to "See" you by Telephone

YOUR customers are busy people. There are times when they prefer that you visit them by telephone. You save their time as well as your own.

A sales executive does 77% of his out of town business by telephone.

He says, "you get the undivided attention of the man you are calling. Without any preliminary conversation, you are right down to basic facts. Think also of conserving the time of the buyer."

Many such practical experiences have grown out of the Key Town Plan. As your business in the larger towns grows and takes more and more of your salesmen's time, why neglect the smaller towns? Keep up your contacts; cover them by telephone from the larger towns. The Bell System has prepared a national and regional Key Town Map, which may be procured free upon request to your local Bell business office.

Study these Key Town Maps to learn the most effective method of reaching your market by telephone—the modern way to meet competition. Cover more towns. Make more contacts. Use classified telephone directories to uncover new outlets. Develop each territory with savings in cost.

The quickest way to make the calls from each Key Town is by Sequence Lists. The Bell System Credit Plan makes it unnecessary to carry cash for the calls. It helps keep a record of all contacts.

Ask the local business office today for complete information. Bell Telephone Service . . . . . *Quick . . . Inexpensive . . . Universal.*

AMERICAN TELEPHONE & TELEGRAPH CO AND ASSOCIATED COMPANIES — BELL SYSTEM

# The ADVERTISERS' INDEX


A

Acme Fishing Tool Co.
Ajax Iron Works
Ajax Rope Co. 180
Alco Oil Tool Co.
Alfit Mfg. Co., Inc.
Allegheny Steel Co.
Allis-Chalmers Mfg. Co. 7
Aluminum Co. of America
American Askania Corp.
American Asphalt Paint Co.
American Cable Co., Inc.
American Car & Foundry Co.
American Fomon Co. 180
American Hammered Piston Ring Co. 169
American-La France & Foamite Corp. 23
American Radiator Co.
American Roller Bearing Co.
American Rolling Mill Co.
American Schaeffer & Budenberg Corp.
American Sheet & Tin Plate Co.
American Steel Works 171
American Telephone & Telegraph Co. Inside Front Cover
American Well Works 180
Andrews Steel Co., The 179
Armstrong Bros. Tool Co.
Ash Grove Lime & Portland Cement Co.
Athey Truss Wheel Co.
Axelson Machine Co. 12
Ayer & Lord Tie Co.

B

Baash-Ross Tool Co. 127
Babcock & Wilcox Tube Co., The
Badger, E. B., & Sons, Co.
Baker Oil Tools, Inc. 8
Baldwin Chain & Mfg. Co.
Barber Asphalt Co., The
Barco Manufacturing Co. 102
Barnickel, Wm. S., & Co.
Barnsdall Refineries, Inc.
Bartlett Hayward Co., The
Beaumont Iron Works Co.
Bendister Burner & Engineering Co.
Bessemer Engine Co. 16
Bethlehem Steel Co. 14
Bigelow Liptak Corp.
Bignall & Keeler Machine Works 19
Blackor Co. 108
Black Wire Rope Co.
Borden Co., The 179
Braden Steel Corp.
Braun, C. F., & Co. 161
Brewster Co., Inc., The 9
Bridgeport Machine Co.
Bristol Co., The
Broderick & Bascom Rope Co. 167
Brown, Arthur C. 182
Brown Instrument Co. 112
Buda Co., The
Buckeye Traction Ditcher Co.
Buffalo Gasolene Motor Co.
Burford Oil Co. 163
Burt Mfg. Co.
Butler Mfg. Co.
Byers, A. M., Co.
Byron Jackson Co. 84

C

Cameron Tool & Supply Co. 74
Carbondale Machine Co.
Carey, The Philip, Co.
Caterpillar Tractor Co. 111
Central Alloy Steel Corp.
Central Tube Co.
Cessna Aircraft Co.
Chain Belt Co. 104-105
Champion Machine & Forging Co., The
Chaplin-Fulton Mfg. Co., The 181
Chapman Valve Mfg. Co., The
Chestnut & Smith Corp. 64
Chicago Bridge & Iron Works
Chicago Pneumatic Tool Co.
Chicago Steel Foundry
Chisholm-Moore Hoist Corp.
Clark Bros. Co. 13
Classified Wants 140-141
Climax Engineering Co.
Colona Mfg. Co. 173
Columbian Rope Co.
Columbus Forge & Iron Co., The
Consolidated Ashcroft Hancock Co., Inc.
Continental Supply Co., The 58
Cooke Seal Ring
Cooper, C. & G., Co., The 80-81
Crane Co. 182
Crane Packing Co.

D

D. & B. Pump & Supply Co.
Darling Valve & Mfg. Co.
Dart, E. M., Mfg. Co.
Davis, G. M., Regulator Co. 166
Dearborn Chemical Co. 106
Delta Electric Co.
Detroit Graphite Co. 63
Dodge Brothers Corp.
Donovan Boiler Works, Inc.
Drane Humphreys Co., Inc.

D

Dresser, S. R., Mfg. Co. 37
Dunn Mfg. Co. 84
Du Pont de Nemours & Co., Inc., E. I.

E

Eagle-Picher Lead Co.
Economy Pump & Oil Tool Co., The 134
Edward Valve & Mfg. Co., The
Elliott Core Drilling Co.
Empire Oil & Refining Co. 15
Emsco Derrick & Equipment Co. 97
Engineering Research & Equip. Co. 139
Ethyl Gasoline Corp.
Exchange Banks of Tulsa

F

Fenwick-Reddaway Mfg. Co.
Ferodo & Asbestos, Inc. 126
Fisher Governor Co. 115
Fisk Tire Co., The
Fiske, Leland E.
Foster Wheeler Corp. 107
Foxboro Co., Inc., The 103
Franklin Valveless Engine Co.
Frick-Reid Supply Corp. 70-71
Fulmer Manufacturing Co.
Fulton Iron Works Co.

G

Gardner-Denver Co.
Garlock Packing Co. 168
Gaso Pump & Burner Mfg. Co. Inside Back Cover
General Electric Co.
Gilbert & Barker Mfg. Co. 170
Goodrich, B. F., Rubber Co., The
Goodyear Tire & Rubber Co.
Gott, H. P., Mfg. Co. 177
Goulds Pumps, Inc.
Grant Oil Tool Co.
Graver Corp.
Gray Processes Corp., The 132
Greene, Tweed & Co.
Greenspon's, Joseph, Sons, Iron & Steel Co. 179
Griscom-Russell Co. 78
Gulberson Corp. 118
Gulf-Caribbean Steamship Line, Inc.
Gulf Refining Co. 22

H

Halliburton, Erle P., Co.
Halliburton Oil Well Cementing Co. 50
Harbison-Walker Refractories Co.
Harrell, F. O.
Harrisburg Pipe & Pipe Bending Co.
Haynes Stellite Co. 11
Hazard Wire Rope Co.
Heat Transfer Products, Inc.
Hercules Motors Corp.
Hercules Supply Co.
Heydrick Mapping Co. 182
Hill, Hubbell & Co. 68
Hills-McCanna Co.
Hinderliter Tool Co.
Hope Engineering Co. 48
Hough, Charles N., Mfg. Co. 131
Hughes Tool Co. Back Cover
Humble Oil & Refining Co.
Hunt, Robert W., Co.
Hussmann Hotel
Hyatt Roller Bearing Co.

I

Imperial Belting Co.
Imperial Refineries
Imperial Royalties Co. 182
Independent Oil & Gas Co.
Ingersoll-Rand Co. 122
International Cement Corp.
International Composition Co., Inc. 182
International Creosoting & Construction Co.
International Derrick & Equip. Co. 24
International Harvester Co. of America.
International Nickel Co., Inc., The 87
International Supply Co.

J

Jarecki Mfg. Co.
Jefferson Union Co.
Johns-Manville Corp. 47
Jones & Laughlin Steel Corp.
Jones, The S. M., Co.
Joubert & Goslin Mch. & Fdy Co.

K

Kansas City Testing Laboratory.
Kaw Steel Construction Co.
Kellogg, M. W., Co., The 52
Kelly Company
Kelly, John Eoghan
Kennedye-Plumb Corp.
Kennedy Valve Mfg. Co., The 163
Kentucky Wagon Mfg. Co., Inc.
Kerotest Mfg. Co.
Key Boiler Equipment Co.
Kohler Co. 135
Koppers Co., The
K-W Ignition Corp., The

L

Landis Machine Co. 3
Larkin Co.
Layne & Bowler Co.
Leader Iron Works
Leschen, A., & Sons, Rope Co.
Lincoln Electric Co.
Linde Air Products Co. 2
Link Belt Co.
Longyear, E. J., Co. 94
Lorraine Corp., The
Lucey Products Corp.
Ludlow Valve Mfg. Co. 171
Lufkin Fdy. & Mch. Co., The
Lufkin Rule Co. 182
Lummus, The Walter E., Co.
Lunkenheimer Co.

Mc

McAlear Mfg. Co., The 165
McCord Radiator & Mfg. Co. 96
McEverlast, Inc. 172
McEvoy, J. H., & Co.
McIntosh & Seymour Corp.
McKee, Arthur G., & Co.

M

Mack International Motor Truck Corp.
Macwhyte Co. 133
Madison-Kipp Corp.
Magnolia Petroleum Co.
Mahoney-Ryan Aircraft Corp., The
Maloney Tank Mfg. Co. Front Cover
Manzel Bros. Co.
Marion Machine Fdy. & Supply Co. 158
Marsh Gauge Pole Co. 178
Martin-Loomis Corp.
Mason Regulator Co.
Melcher, A. F.
Merco Nordstrom Valve Co.
Metric Metal Works
Mettler, Lee B., Co. 83
Midwest Piping & Supply Co.
Miller, Max B., & Co., Inc.
Miller Combination Bailer & Pump Co.
Mine Safety Appliance Co.
Missouri Portland Cement Co.
Moore, Lee C., & Co., Inc. 57
Munn & Co. 182
Myers, F. E., & Bro., Co. 177

N

National Lead Co.
National Petroleum Engineering Co. 182
National Supply Co. 92-93
National Transit Pump & Machine Co. 60-61
National Tube Co. 98
Natural Gas Equipment Co. 67
Naturaline Company of America 64
Naylor Pipe Co. 128
Neilan, Schumacher & Co. 167
Newton Process Mfg. Co.
Norris Brothers, Inc. 90
North American Car Corp.
Northern Pump Co.
Novo Engine Co.
Nugent, Wm. W., & Co. 182
Nye Tool & Machine Works

O

Oakite Products, Inc.
O'Brien Steel Construction Co. 131
Ohio Injector Co., The
Oil Conservation Engineering Co., The 109
Oil Country Specialties Mfg. Co., The 178
Oil Insurance Association
Oil Well Supply Co. 77
Oklahoma Gas & Electric Co.
Oxweld Acetylene Co.

P

Page Steel & Wire Co. 6
Parkersburg Machine Co.
Parkersburg Rig & Reel Co. 88
Parsons Co., The
Patrick, R. S.
Patterson-Ballagh Corp. 100-101
Pattin Brothers Co. 117
Penberthy Injector Co. 45
Petroleum Iron Works Co.
Pforzheimer, Carl H., & Co. 171
Phillips Petroleum Co.
Pilley Packing & Flue Brush Mfg. Co.
Pittsburgh Equitable Meter Co. 178
Pittsburgh Steel Products Co. 18
Pomona Pump Co.
Portable Light Co., Inc., The
Powell, William, Co.
Power Piping Co. 179
Prescott Co., The
Pressed Steel Car Co.
Prest-O-Lite Co., Inc., The
Pure Oil Co.
Pyle National Co. 110
Pyrene Manufacturing Co.

Q

Quaker City Rubber Co. 177

R

Reading Iron Co. 5
Reading Steel Casting Co., Inc.

R

Regan Forge & Engineering Co. 21
Reid, Joseph, Gas Engine Co.
Republic Iron & Steel Co. 91
Republic Rubber Co., The
Republic Supply Co.
Riter-Conley Co. 182
Robinson Orifice Fittings Co. 181
Ross-Meehan Foundries Co.
Russell Mfg. Co., The
Ryerson, Joseph T., & Sons, Inc. 178

S

Safety Gas Main Stopper Co. 182
Shaffer, J. E., Co.
Shaw, S. F.
Shell Petroleum Corp.
Sinclair Refining Co. 151
Sivyer Steel Casting Co.
Skelly Oil Co.
Skinner, M. B., Co. 123
Smith, A. O., Corp.
Smith Engineering Co.
Smith Separator Co.
Smooth-On Mfg. Co. 175
South Chester Tube Co. 10
Southern Cornice Works
Southwestern Engineering Corp. 35
Spang & Co.
Spang, Chalfant & Co., Inc. 121
Spartan Aircraft Co.
Springfield Wagon & Trailer Co.
Standard Steel Works
Stanley Belting Corp. 180
Star Drilling Machine Co.
Staynew Filter Corp.
Steiner, George 182
Stockham Pipe & Fittings Co.
Stoody Co. 17
Stork Engineering Co. 175
Strom Steel Ball Co.
Strong, Carlisle & Hammond Co., The
Sullivan Machinery Co.
Sun Shipbuilding & Dry Dock Co.
Sure Shot Torpedo Co.
Swartwout Co., The

T

Taubman Supply Corp.
Taylor Instrument Companies 174
Templeton, Kenly & Co., Ltd. 177
Texas Power & Light Co.
Thermoid Rubber Co.
Timken Roller Bearing Co.
Tips Engine Works
Titusville Forge Co. 178
Titusville Iron Works Co., The 20
Toledo Pipe Threading Machine Co., The. 99
Trimont Mfg. Co.
Trumble Gas Trap Co.
Tube Turns, Inc.
Tulsa Boiler & Machinery Co. 54
Tulsa Sheet Metal Co.
Twin Disc Clutch Co.
Twin-Flex Corp., The

U

Union Carbide & Carbon Corp.
Union Wire Rope Corp.
United Air Cleaner Co.
United Iron Works, Inc.
Universal Oil Products Co. 41

V

Vez Company
Victaulic Co. of America
Victor Balata & Textile Belting Co. 181
Victor Welding Equipment Co.
Vogt, Henry., Machine Co.

W

Wagner Electric Corp. 95
Wailes Dove-Hermiston Corp. 124-125
Walworth Co. 1
Warren Petroleum Co.
Washburne, Chester W. 182
Waukesha Motor Co. 73
Western Gas Construction Co., The
Westinghouse Electric & Mfg. Co.
West Texas Utilities Co. 176
Whiting, P. H., & Co., Inc.
Wico Electric Co.
Wickwire Spencer Steel Co. 89
Wieman-Kammerer-Wright, Inc.
Wilgus Mfg. Co., The 67
Williams, J. H., & Co.
Williamsport Wire Rope Co.
Williams Tool Corp. 130
Wilson Oil Tools Corp.
Wilson-Snyder Mfg. Co.
Wilson Welder & Metal Co., Inc. 43
W-K-M Company, Inc.
Wood Shovel & Tool Co., The
Worthington Pump & Machinery Corp. 4
Wright Mfg. Co.

Y

Yale & Towne Mfg. Co.
Young Engine Corp.

Z

Zwetsch, Heinzelmann & Co. 181

# The Oil and Gas Journal

PRODUCING REFINING ENGINEERING MARKETING

VOL. 27. NO. 48 TULSA, OKLAHOMA, APRIL 18, 1929

Copyright, 1929, by The Petroleum Publishing Co.

# TABLE OF CONTENTS

## SPECIAL ARTICLES


Big Decline Shown in Crude Production ..... 27
*By Andrew M. Rowley*
Conservation movement in Oklahoma and West Texas mainly responsible. California big factor in situation.

Curtailment Essential to Conservation ..... 29
*By A. E. Mockler*
Chairman R. C. Holmes replies to Secretary Wilbur.

Breaking in the Petroleum Engineer ..... 30
*By Thomas F. Smiley*
School officials say graduates have little difficulty getting start.

Hot Water Process Breaks Down Emulsions ..... 30
*By Thomas F. Smiley*

Recovery of Oil by Air and Gas Lift ..... 31
Result of extensive investigations made public.

Court Restrains Town-Lot Drilling ..... 32
United States Circuit Court of Appeals decision in Oxford Townsite.

Oil Heating Institute Reorganized ..... 32
*By A. E. Mockler*
Annual convention of American Oil Burner Manufacturers Association.

Wilbur Explains Policy on Permits ..... 33
*By Charles E. Kern*
Present prices bring no adequate return in royalties or to industry.

Order Upset Rocky Mountain Area ..... 33
*By Tolbert R. Ingram*
Governors and operators disturbed by interpretation of Hoover policy.

Geologist's Tour of Persian Fields ..... 34
*By Frederick G. Clapp*
Account of journey of inspection for Persian government.

Plain Speaking (Editorial) ..... 36

Oil Assured for Life of Burners Being Built ..... 38
*By W. R. Boyd*

Field Problems and Their Solution ..... 75
*Edited by Thomas F. Smiley*

Magnetometer Survey of Louisiana ..... 85
*By L. Spraragen*
Relation shown between magnetic anomalies and producing areas.

Recovery Methods in Control of Water ..... 86
*By R. Van A. Mills*
Repressuring, gas lift and dewatering described.


## FIELD OPERATIONS


Late Fields ..... 38

North Texas and Panhandle ..... 39-172
*By James H. Dameron*

West Texas ..... 40-172
*By James H. Dameron*

Oklahoma ..... 42
*By W. A. Spinney*

Kansas ..... 44
*By W. A. Spinney*

North Louisiana-Arkansas ..... 46
*By D. H. Bancroft*

Southwest Texas ..... 49
*By B. D. Stevenson*

Gulf Coast ..... 51
*By Neil Williams*

East Central Texas ..... 51
*By Neil Williams*

Rocky Mountain Area ..... 53
*By Tolbert R. Ingram*

Canada ..... 53
*By Victor Lauriston*

California ..... 55
*By L. P. Stockman*

Eastern Fields ..... 59
*By D. S. Wakenight*

Kentucky-Tennessee ..... 59
*By Whit*

Central West ..... 62
*By Whit*

Michigan ..... 155
*By Special Correspondent*


## REFINING AND MARKETING


Advance in All Motor Fuels Continues ..... 28
*By C. O. Willson*
Oklahoma refiners establish 7½-cent level for U. S. Motor gasoline. Demand for cylinder stocks significant. Gas oils lower.

Eastern Gasoline Market Improved ..... 137
*By A. E. Mockler*

Natural Gasoline Manufacture ..... 138

Chicago Market Shows More Activity ..... 142
*By J. B. Waldo*

Practical Suggestions in Refining ..... 144
*By W. T. Ziegenhain*

Brief Items for Petroleum Refiners ..... 146

Technical Questions Answered ..... 147
*By Dr. C. K. Francis*

Refinery and Crude Prices ..... 148-149

Tank Wagon Quotations ..... 150

Of Interest to Sales Departments ..... 162

Handling Sulphur Crude in Refineries ..... 164
*By D. G. Cooper*
Utmost care in procedure must be followed.


## ARTICLES OF GENERAL INTEREST


The Advertisers' Index ..... 25

Men Known in Oildom and Personals ..... 76

Equipment and Supplies ..... 79

Natural Gas Developments ..... 82

Classified Want Advertisements ..... 140-141

Oil Securities Market ..... 152-153

Bureau of Mines Report for February ..... 168

Crude Petroleum Statistics ..... 184



BE A REGULAR READER

The Oil and Gas Journal Tulsa, Okla.

You are hereby directed to mail The Oil and Gas Journal to me for ..... year. Enclosed find remittance $ .....

Classify my interests as checked by me.

..... Producing ..... Refining
..... Equipment ..... Marketing

Name .....
Address .....
City .....

$6 a Year
$3 6 Months


Refinery Section Starts on Page 137

# Big Decline Shown in Crude Production

**Highest daily average estimated total production in 1928, week ended Dec. 29, 2,585,844 bbls. Lowest in 1928, May 19, 2,338,241 bbls.**

## Conservation Movement in Oklahoma and West Texas Mainly Responsible. California Big Factor in Situation

By Andrew M. Rowley

**Highest daily average estimated light oil production in 1928, week ended Dec. 29, 2,158,134 bbls. Lowest in 1928, Mar. 3, 1,927,713 bbls.**

Crude oil production in the United States last week recorded the greatest decline, both in total and light oil output, registered since the week ending May 12, 1928. The conservation movement in the greater Seminole area of Oklahoma and in the Hendricks Pool in West Texas was mainly responsible for the substantial decrease shown, the Seminole pools, including St. Louis, being 25,500 barrels daily below the previous week's average, while West Texas showed a drop of 22,000 barrels daily. Kansas recorded a good increase for the first time in many months when the Sedgwick County activity made itself felt in the production column.

Production in Oklahoma probably will show an increase for this week due to the opening of all wells in the greater Seminole area to procure new figures on potential upon which to base percentages for permitted production. Production of this area for the 24 hours ending Tuesday morning of this week totaled 104,485 barrels more than the daily average for last week. This increased output for the one day will be reflected in the average figures for this week with the probability another decline will be recorded in the average for next week.

Definite efforts to hold production in California more nearly to market requirements are scheduled to become effective during this week and the industry will watch with close interest the results. Recent discoveries at Kettleman Hills there and the completion of big wells from the Clarke and O'Connell zones at Santa Fe Springs intensify the overproduction menace in California and give a good picture of what may happen on the Pacific Coast if unrestrained development is permitted at this time.

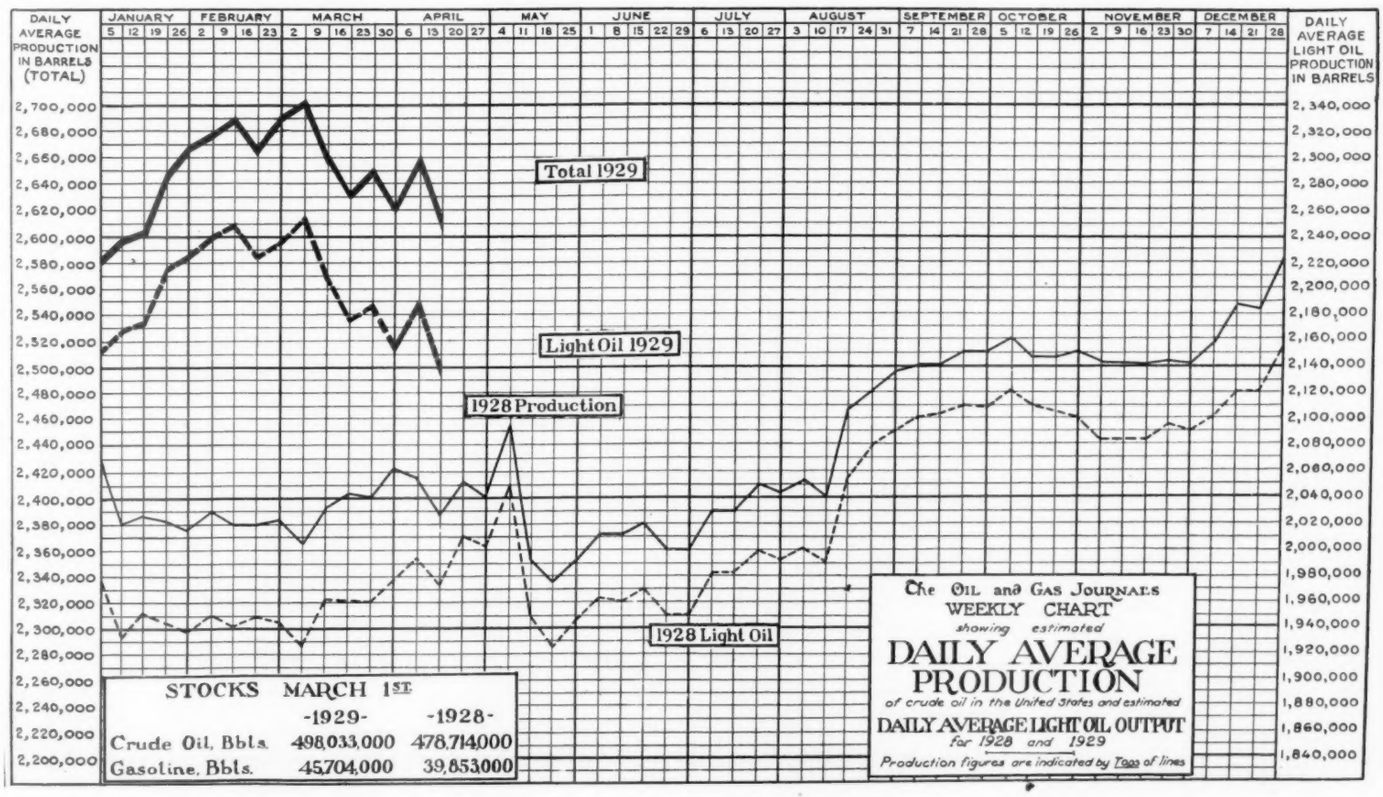
An improvement in the crude oil situation is plainly evident in the Mid-Continent area. The situation in California provides the big note of uncertainty as to the future. If real progress is made there in the conservation movement and the new discoveries are developed in a conservative manner and only as the crude is needed, the industry may well expect some measure of the prosperity due it.

### PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended April 13, and a comparison with the previous week follows:

| | April 13 | | April 6 | |
|---|---|---|---|---|
| | Light | Heavy | Light | Heavy |
| **Oklahoma—** | | | | |
| Tonkawa | 10,090 | ..... | 10,065 | ..... |
| Burbank | 21,235 | ..... | 21,615 | ..... |
| Other Osage Fields | 25,015 | ..... | 25,185 | ..... |
| St. Louis-Pearson | 103,610 | ..... | 111,170 | ..... |
| Cushing and Shamrock | 20,615 | ..... | 20,680 | ..... |
| Bristow | 19,520 | ..... | 19,415 | ..... |
| Allen | 26,195 | ..... | 25,790 | ..... |
| Seminole | 255,095 | ..... | 273,110 | ..... |
| Northern Miscellaneous | 111,710 | ..... | 111,520 | ..... |
| Southern Fields | 54,760 | ..... | 54,640 | ..... |
| Total Oklahoma | 647,845 | ..... | 673,190 | ..... |
| **West Texas—** | | | | |
| Hendricks | 143,097 | ..... | 161,380 | ..... |
| Yates | 87,989 | ..... | 87,695 | ..... |
| Remainder | 122,991 | ..... | 127,047 | ..... |
| Total West Texas | 354,077 | ..... | 376,122 | ..... |
| North Louisiana | 29,775 | 5,835 | 29,735 | 5,815 |
| Arkansas | 23,660 | 49,135 | 23,825 | 49,275 |
| North Central Texas | 135,688 | ..... | 136,245 | ..... |
| Texas Panhandle | 61,725 | ..... | 66,380 | ..... |
| East Central Texas | 20,391 | ..... | 20,818 | ..... |
| Kansas | 105,210 | ..... | 97,980 | ..... |
| Total Mid-Continent Area | 1,378,371 | 54,970 | 1,424,295 | 55,090 |
| Gulf Coast | ..... | 154,597 | ..... | 151,174 |
| Southwest Texas | ..... | 72,979 | ..... | 72,627 |
| Eastern | 110,500 | ..... | 110,500 | ..... |
| Rocky Mountain Area | 67,165 | ..... | 71,382 | ..... |
| **California—** | | | | |
| Santa Fe Springs | 146,000 | ..... | 152,000 | ..... |
| Long Beach | 187,000 | ..... | 185,000 | ..... |
| Torrance | 2,000 | 12,500 | 2,000 | 12,750 |
| Huntington Beach | 45,500 | ..... | 45,000 | ..... |
| Elwood | 29,000 | ..... | 27,500 | ..... |
| Inglewood | 14,500 | 11,000 | 14,500 | 11,000 |
| Ventura Avenue | 54,000 | ..... | 55,000 | ..... |
| Seal Beach | 50,000 | ..... | 46,000 | ..... |
| Remainder of State | 58,000 | 168,000 | 58,000 | 167,000 |
| Total California | 586,000 | 191,500 | 585,000 | 190,750 |
| Total United States | 2,142,036 | 474,046 | 2,191,177 | 469,641 |
| Grand Total | | 2,616,082 | | 2,660,818 |

→ **Total Decrease, 44,736 Bbls.; Light Oil Decrease, 49,141 Bbls.** ←



# Advance in All Motor Fuels Continues

## Oklahoma Refiners Establish 7½-Cent Level for U. S. Motor Gasoline. Demand for Cylinder Stocks Significant. Gas Oils Lower

By C. O. Willson

U. S. Motor gasoline in Oklahoma the first of the week was moving toward a 7½-cent level.

The advance from 7⅜ to 7½ cents was started on Saturday and on Tuesday a majority of the larger refiners in the State had advanced to this level in their sales direct to the jobbing trade. It was thought that the 7½-cent price would be generally established before the end of the week. Similar advances were being made in the other domestic grades including 450 endpoint material and the 60-62 437 endpoint grade. The high gravity gasolines were not so active although several refiners have advanced their price one-eighth cent over the level established last week.

Among the remaining products kerosene in Oklahoma was holding its own although price reductions have materialized in other Mid-Continent refining sections notably North Texas. Several sellers reported dullness in the spot kerosene demand last week with an improvement noted the first two days of this week.

The demand for gas oils, distillates and the highest gravity fuel oils has fallen off and this has been reflected in prices. This development apparently is entirely seasonal. The demand for gas oil suitable for cracking stock continues heavy and refiners able to furnish this material for intrastate shipment have not been compelled to reduce their prices. On the other hand, the premiums obtainable in March and February for straw color, low cold test material no longer prevail. These grades, including the regular grades of furnace oil distillates are a drug on the market with prices lower. The demand for U.G.I. gas oil also has decreased and sales of this material as low as 2½ cents were reported the first of the week.

This market situation in regard to gas oils and distillates includes the high gravity fuel oils. The demand for these fuel oils has come largely from jobbers who used them as furnace oils. The few refiners offering these high gravity fuel oils in most cases do not secure them direct from the crude in their refinery operation but obtain the desired specification by blending a low gravity fuel oil with gas oil or distillate. Thus the lower gas oil and distillate prices furnish cheaper blending material. The lower gravity fuel oils of good quality are firm.

### Fuel Oils at Bottom

In the opinion of most market observers the reductions which have been made in gas oils and high gravity fuel oil since the first of April probably are the last for the immediate future at least. With the arrival of warmer weather there is some reduction in the consumption of these products although there is very little change in the industrial, railroad and public utility demand for the regular grades of fuel oil. With an advancing gasoline market and higher crude oil prices in prospect the trend in the Oklahoma refinery operation will be to use the maximum quantity of gas oil and high gravity fuel oil as charging stock in the cracking operation. New cracking installations now under construction and the improvements being made at units already operating will increase the demand for cracking stock by midsummer.

### Demand for Cylinder Stocks

Another development which has some bearing on the fuel oil situation in Oklahoma is the heavy demand for bright stocks and the better grades of steam refined cylinder stocks. Although prices in Oklahoma have not advanced as much as they have in Pennsylvania and other eastern refinery centers the Oklahoma market has been strong for several months with prices which have made this phase of refinery operation highly attractive. Additional advances in both steam refined cylinder stocks and bright stocks materialized during the past week.

The advance in cylinder stocks which largely accounted for the sensational advances in Pennsylvania grade crude oil late in 1928 is explained as due to the changes in motor design which have greatly increased the consumption of the heavier grades of lubricating oils. The

(Continued on Page 160)

### REFINED MARKET BAROMETER

Gasoline prices east of the West Coast were advanced at practically all refineries during the past week. The East Coast had its first advance in several months and increases of from one-eighth to one-quarter cent materialized in most of the other refining groups. The advances were in response to a seasonal increase in the domestic demand. Additional advances are predicted before the end of the month. Kerosene prices were steady both for domestic and export movement. In the domestic market the greatest strength is apparent at interior points. No changes of general importance materialized in fuel oil and gas oil, although the movement in the Mid-Continent and Middle West continues dull. Advances were made in some grades of natural gasolines with the remaining grades steady. Steam refined cylinder stocks and bright stocks are strong with prices either firm or higher than last week. Continued price weakness is apparent in petroleum wax.

**Mid-Continent**—Refiners again boost prices on domestic grades of gasoline. Jobber demand for gasoline more active. Kerosene steady except North Texas, where prices have been lowered. Gas oil, distillate and high gravity fuel oil prices lower. B and BB grades of natural gasoline higher. Steam refined cylinder stocks and bright stocks higher. Wax weak.

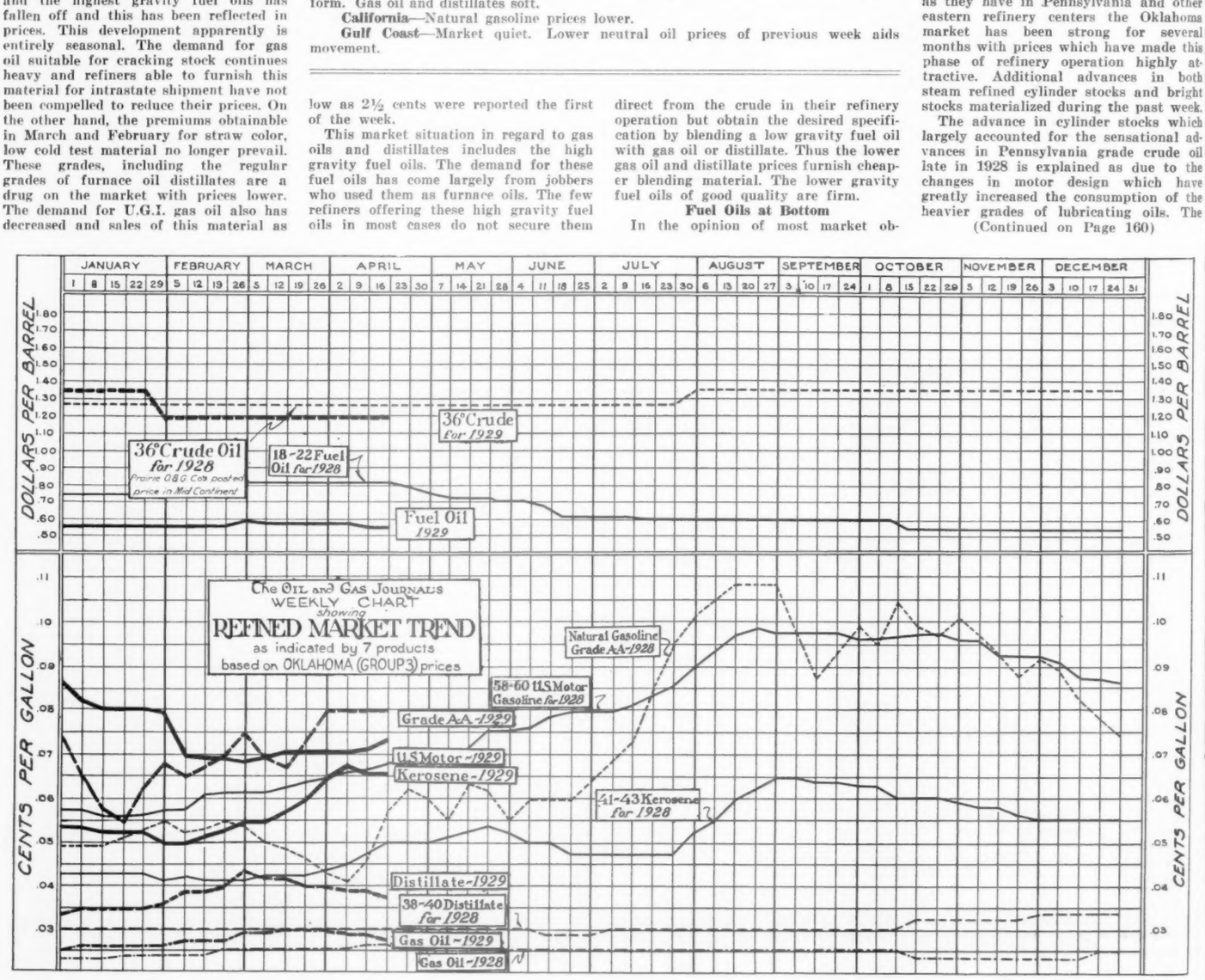
**Atlantic Seaboard**—Standard Oil Co. of New Jersey and other refiners advance U. S. Motor gasoline one-fourth cent. Advance at some points one-half cent. Lubricating oils show continued strength. Better movement of kerosene with no change in price. Gas oil and bunker oil steady. Wax prices lower.

**Pennsylvania**—Gasoline demand and prices higher. Kerosene movement strong. Steam refined cylinder stock and bright stock practically unobtainable for prompt shipment. Wax slow. Fuel oil prices higher.

**Chicago**—Gasolines more active and prices higher. Kerosene demand not uniform. Gas oil and distillates soft.

**California**—Natural gasoline prices lower.

**Gulf Coast**—Market quiet. Lower neutral oil prices of previous week aids movement.



# Curtailment Essential to Conservation

## Chairman Holmes Replies to Secretary Wilbur. Control of Production Needed to Encourage Maximum Yield of Gasoline

By A. E. Mockler
*New York Bureau, The Oil and Gas Journal*

NEW YORK, Apr. 15.—The American Petroleum Institute, in furtherance of its conservation plan, will work closely with state and national authorities, and the regional committees of the Institute will go forward with their work, said R. C. Holmes, president of The Texas Corporation, and chairman of the American Petroleum Institute's general committee on conservation. Mr. Holmes' Statement was in reply to a letter from Ray Lyman Wilbur, Secretary of the Interior, chairman of the Federal Oil Conservation Board.

Mr. Holmes' statement pointed out that it is "generally agreed, however, that any action which does not contemplate such control of production here and abroad as will encourage all refiners to produce the maximum rather than the minimum yield of gasoline from all crude run is in effect a full and substantial measure of conservation." The full statement issued by Mr. Holmes follows:

**Chairman Holmes' Statement**

Dr. Wilbur's letter will have prompt and full consideration by our committees and by the board of directors of the American Petroleum Institute at its meeting here on April 24. I think it should be made plain that what we submitted to the board on April 3 was a plan, or a basis of a plan, and not an agreement. Of course, a plan for conservation or restriction without any indication of the quantity of oil we estimate would fill the necessary requirements would be rather indefinite, and I doubt that it makes any great difference whether it happened to be the 1928 production or some other figures.

In the meantime, the regional committees are proceeding actively in carrying out the Institute's program.

The desire of the board, expressed in its several reports, coincides with that of the industry in the prevention of unnecessary waste and the conservation of the oil to the fullest extent consistent with the interest of all concerned. It is recognized that the present plan and attempt are imperfect and incomplete and are dependent in part upon the studies which have been outlined as desirable and necessary, and possibly upon other conditions which have not as yet been analyzed or encountered.

The question as to whether legislation is necessary in order to effectively and continuously conserve oil to the fullest extent consistent with the interests of all concerned is one on which counsel for the different units of the industry have differed for a number of years, and the Federal Oil Conservation Board's suggestion in regard to this matter wlil be considered carefully and thoroughly.

**Maximum Yield From Crude**

The desirability of control in drilling and field operations, suggested by the board, is a procedure which has to some extent been adopted where possible in new areas where wildcatting is going on. The approval of the board of this procedure in principle will do much to stimulate further effort and success along these lines.

We think it generally agreed, however, that any action which does not contemplate such control of production here and abroad as will encourage all refiners to produce the maximum rather than the minimum yield of gasoline from all crude run is not in effect a full and substantial measure of conservation.

The contact which the board will now establish directly with the governors of the oil-producing states should be of real help in the working out of a definite program, which we would not expect to differ materially in its fundamentals from the plan which the industry has already submitted.

We are confident that these governors and the authorities in other countries will appreciate and recognize the desirability and necessity of making effective a plan to limit production to market requirements.

Our efforts, of necessity, will be along such lines as will be subject to the least amount of adverse criticism, and we must work closely with state and national authorities. The benefits to be derived by the public and the industry are too evident to be overlooked or misunderstood by those who are at all familiar with the situation.

**Secretary Wilbur's Letter**

Secretary Wilbur's letter, speaking also for his associates of the Federal Oil Board, James W. Good, Secretary of War; Charles F. Adams, Secretary of the Navy, and Robert P. Lamont, Secretary of Commerce, was as follows:

The board has now given consideration to questions effecting the waste of oil due to the present large overproduction. I may recall that at our meeting with your directors resolutions were presented which had been adopted by the American Petroleum Institute proposing restriction of the production of petroleum in the United States during the year 1929 to an amount not in excess of the 1928 production and asking the approval of the board to such a course.

As explained to the directors of the Institute, the Oil Conservation Board possesses no authority to approve such an agreement as that proposed, and the board is advised that any such action on the part of the Institute would possibly constitute a violation of the Sherman Act. It would further appear that the joint legal committee appointed in December, 1927, of which three members were chosen by the American Bar Association, three by the Government, and three by the Petroleum Institute, came to the same conclusion and recommended legislation.

Purely negative action does not cure the prime difficulty—the rapid waste of our oil resources. The purpose of the board has been to find a constructive method for the prevention of the present reckless waste of oil and it naturally sympathizes with every practicable step.

As you are aware, the investigations of the board over the past few years have demonstrated large wastes in the production and utilization of our oil, and an alarming prospect as to our future supplies. Its conclusions, in which it has been confirmed by scientific investigation and a considerable part of the industry, were that in the long view the positive method of conservation is the initial control of development through the control of drilling to the end that upon discovery of a new oil pool a plan for its development should be established which would prevent the waste of gas, the consequent loss of gas pressures and its serious effect upon the total yield of the pool and to prevent other great losses which arise from flush flows due to periodic overproduction, from feverish competition and offset drilling, with its consequence in unnecessray diversion of oil from gasoline to fuel on such occasions.

Had such control been in action during the last three years, not only would the present situation not have arisen, but the vast present waste of oil by diversion from gasoline to fuel would not be taking place. While such a course could not be wholly applied to old pools, it could be made effective in new pools and new strata. It is upon this program that the board has sought co-operation of the industry. To solely close off production temporarily to relieve present congestion and stop the immediate waste of gasoline to fuel would not affect the real problem—that is, the long view wastes mentioned above.

It was determined by the legal advisory committee above mentioned that there were no constitutional grounds upon which the Federal Government could impose such a regulation of drilling, but that the sole legal authority for such action lies within the state governments themselves. Suggestions were made which have been or are in course of discussion in the legislature in various oil producing states.

The problem appears to the board, therefor, due to the legal inhibitions, to be one in the real solution of which action must be secured from the different states. The board recognizes that individual state action with co-ordination would not cover the question, but with view to bringing about such a program and its co-ordination, the board believes it would be worth while to renew discussion with the state authorities of the three or four principal oil producing states, particularly to learn if it is not possible for them to enter upon an interstate compact under the provisions of the Constitution authorizing such compacts to which the Federal Government through congressional action would be a party. The character of such a compact would need much consideration but it could well comprise creating a joint board for the purposes of constructive conservation and thus secure the nation from the very real peril that will lie in the reckless exhaustion of our oil resources. With this in view the board is planning to have Dr. George Otis Smith, on its behalf, visit and interview the governors of three or four dominating oil producing states and learn their views upon such a proposal.

It believes that the above suggestion, if it can be consummated on constructive lines, should extend the life of our oil resources and give greater stability to the industry, should vastly increase the returns to those states, and at the same time should protect the consumer.

## NO CURTAILMENT IN GASOLINE OUTPUT CONTEMPLATED IN PLAN

By Charles E. Kern
*Washington Bureau, The Oil and Gas Journal*

WASHINGTON, D. C., Apr. 15.—It is being pointed out in Washington that under the crude oil curtailment plan contemplated by the American Petroleum Institute there would be no restriction in the quantity of gasoline refined during 1929 and that while the plan contemplated an increase in consumption of perhaps 10 per cent it would be fully met if production this year were kept down to the level of 1928.

The brief announcement that the 1929 production would be held at the level of 1928 appears to have been the sole basis for the criticism of the plan of the Institute. An analysis of that report, however, showed that this criticism was not warranted. With the production of almost 900,000,000 bbls. of oil in 1928, 80,000,000 bbls. of imports and 20,000,000 bbls. placed in storage, an aggregate of 1,000,000,000 bbls. of available crude oil is shown.

The amount of crude run to stills was 912,000,000, so that the production, imports and surplus placed in storage in 1928 would provide for almost 9 per cent increase in the production of gasoline if the percentage of gasoline recovery were no greater than in 1928.

However, there is very wide agreement that the gasoline production will be increased by the wider and more intensive application of the cracking process from 41 to perhaps 43 per cent and it is roughly estimated that every 1 per cent in the recovery of gasoline would be equivalent to the saving of about 25,000,000 bbls. of crude.

With these figures in mind it can readily be seen that the holding down of e production of 1929 to the level of 1928 would have no effect on the supply of gasoline and if it did have any such effect the only result would be a reduction of stocks acknowledged to be too large and only brought to its present magnitude by necessity to store oil to avoid waste and not for any economic purpose.

## Institute Directors Will Decide April 24 Conservation Plans

Directors of the American Petroleum Institute will meet in New York on April 24 to consider matters relating to the crude oil conservation plan approved by the directors at their meeting March 27. It is understood the directors will decide whether the American Petroleum Institute as an organization should continue its efforts to make the conservation plan effective or whether the problem of overproduction should now be turned over to state organizations, in view of the attitude of the Federal Government.

It is realized that if conservation is to be achieved active steps must be taken at this time. Any plan contemplating long, drawn out negotiations or conferences can hardly result in any relief now, when it is needed. The situation, especially in California, is fraught with great possibilities, due to recent discoveries in that State. Definite action looking to a curtailment in crude oil output in California is an immediate necessity to the success of any conservation plan.

Dr. George Otis Smith, on behalf of the Federal Oil Conservation Board, has started his trip to various oil producing states to confer with the governors of these states regarding conservation.

Committees of operators in Oklahoma, Texas and California, working with state officials in these states, have made considerable progress in the effort to hold production more nearly to market requirements and it is expected these efforts will be continued.

# Breaking in the Petroleum Engineer

## School Officials Say Graduates Have Little Difficulty in Getting a Start. Salaries Keep Pace With Experience

By Thomas F. Smiley

Among questions frequently asked by young men considering petroleum engineering as a vocation are: After I have completed an engineering course, how am I to get started in making practical use of it? Is it hard for the young engineer, fresh from school, to get a job? What sort of work will I be set to doing at first? What am I to expect in the way of salary? Should I try to get a job with a big oil company or with a small one?

The matter of the engineering course itself and what educational institutions of the country are doing with a view of fitting students for actual work in various branches of the oil industry has been told in earlier articles in The Oil and Gas Journal, "Schools Perfecting Petroleum Courses," November 1, 1928, and "College Diplomas Just the Beginning," December 20, 1928. Since those articles were published Waite Phillips, wealthy Tulsa oil man, has given $150,000 for a building and equipment for the school of petroleum engineering recently established at the University of Tulsa.

Responses to inquiries sent to heads of petroleum engineering schools, along with examination of bulletins published by such schools, show that efforts are made to give students as much practical field work as possible before graduation, thus removing much of the newness and strangeness that are likely to hamper the young engineer in his first job.

Practical oil men, with thorough technical training, direct the work of petroleum engineering schools. This, with the fact that most of these schools are in contact with the heads of large oil companies, is of distinct benefit to the graduate who is looking for a place to begin actual work in petroleum. Statements from leading petroleum engineering schools indicate that graduates meet little difficulty in finding employment.

### Beginners' Tasks Vary

The character of the beginner's tasks varies. Oil company executives and engineering instructors unite in emphasizing the importance of actual field work as part of the student's preparation. Some young men upon completing their studies put on overalls and go to work as roustabouts. Others get jobs that require only elementary knowledge of engineering, such as keeping well logs and peg models, making maps, supervising cementing jobs, etc.

The young engineering graduate in most oil fields receives $125 to $150 a month at the start. If he shows himself capable he may expect salary increases with reasonable regularity. It is almost useless to offer an estimate on the maximum salary to which a petroleum engineer may look forward. Like men in other professions the petroleum engineer may become so valuable through his expertness in some specialized line that it is difficult to measure his worth in dollars. He may make an intensive study of certain oil-field problems, such as corrosion, crooked holes, water shutoffs, repressuring, etc., and gain special skill that prompts major oil companies to pay him a big salary to insure retention of his services.

There appears to be little choice as between the big oil company and the small one so far as the beginner is concerned. The opinion seems to prevail that while the smaller concerns sometimes pay more at the start, promotions and salary increases are likely to be somewhat more rapid with the larger ones.

Concerning the demand for engineering graduates and the type of work to which they are likely to be assigned Noel Hubbard, alumni recorder of the School of Mines and Metallurgy, University of Missouri, Rolla, Mo., writes:

"I do not quite agree with the conclusion of other educators regarding graduates, that a large percentage begin as roustabouts. In five years that I have been in this office and have handled the placement of our graduates, every one graduating here has gone into strictly engineering work such as junior production engineers, chemists or geologists. I am frank to say that I believe in the long run they would probably be better off if they did begin as roustabouts as our men in the production end seem to be getting along in splendid shape and are not so likely to be laid off when the depression comes.

"Answering specifically the questions asked in your letter, our petroleum graduates start out as junior production engineers, chemists or geologists. We offer at this school work in the other branches of engineering and there has been a decided demand from the mineral industry for these engineers. This is especially true of the mechanical engineers. Last year we could not supply the demand made upon us by the petroleum refineries for mechanical engineering graduates. We also had some call for electrical and civil engineers for the petroleum industry.

"The pay received by the young graduate in this country is usually around $150 a month. For foreign service it goes up to $175 and in some cases $200 a month with transportation paid from New York to the destination. I have on my desk now a request from one of the large producing companies of Venezuela who is interested in employing a number of young men there at $175 a month, with transportation from New York and expenses in the field.

### Keep in Touch With Graduates

"Through our alumni office we try to keep in touch with every graduate of the School of Mines, and with the exception of about 75 or 80, we now have good addresses for every man who has received a degree from this school, and about 25 per cent of the nongrads. We also keep in touch with the employment situation and are continuously placing out men who are interested in securing other positions. In the case of the Venezuelan concern we are mimeographing an abstract of their letter and sending it to all our former graduates who we think might be interested. This is the usual method of procedure in such cases.

"In the five years that I have been handling the matter of employment for our graduates every man graduating from this school has gone into work along the lines of his profession. I might say, however, that the last two years it has not been so easy to place men in the oil fields as it was the first three years. There are indications, however, that this situation is adjusting itself and I think that we may expect better demands in the future. The demand for men in foreign service has always been greater than we could supply."

Mr. Hubbard, it will be noted, speaks of the school's effort to keep in touch with graduates. This practice of maintaining a watchful eye on the welfare of alumni is not confined to any one school. Lester C. Uren, professor of petroleum engineering in the University of California, Berkeley, Calif., mentions the same thing in the following communication in which he emphasizes the importance of routine field operations in the making of a petroleum engineer:

### Summer Vacations in Oil Fields

"Unlike some of the schools giving instruction in petroleum engineering, the University of California requires its undergraduate engineers to spend several months of summer vacation time in practical work in the oil fields. As a result of this, most of them leave the university with a fair understanding of the practical aspects of field work to supplement their academic preparation. Even a few months training during the college course, and many students have more, will enable them to secure junior engineering positions with the oil companies without further work in routine positions. For this work, the companies now pay from $150 to $200 per month. These men are widely used by the oil companies in detailed studies of gas lift operations, repressuring of oil sands, keeping up well logs and peg models, supervising cementing operations, making surveys, preparing maps and geologic sections, gas and oil gauging, maintaining production records and other work of engineering character.

"If an engineering graduate has not had contact with practical drilling and production operations in the oil fields, he should by all means gain such experience before attempting to enter the engineering field. Even though he has a few months' experience at such work, it would undoubtedly be to his ultimate advantage if he would for a time defer any thought of engineering work and gain full knowledge of routine field operations during an apprenticeship which might profitably extend over several years time.

"We maintain a continued interest in the welfare of our graduates and we fortunately have been able to interest them in the development and welfare of their Alma Mater so that we are more

(Continued on Page 145)

# NO WATER IN HOT-WATER PROCESS BUT IT BREAKS DOWN EMULSIONS

By Thomas F. Smiley

The emulsion problem has been met with satisfactory results by one major oil company in the Seminole Field of Oklahoma by simple adaptation of a familiar device used in thousands of homes throughout the land to provide hot water for the morning shave, the baby's bath or for washing the breakfast dishes. Similarity of the installation, in principle, to the instantaneous water heater of the American home prompted the men using it to refer to this method of handling oil-field emulsions as the "hot-water" process, although no water, hot or otherwise, is employed at any stage.

Any ordinary oil-field boiler is converted into equipment for breaking down emulsions by introducing a pipe coil in the firebox, where it will be in immediate contact with the gas flame. The oil-and-water mixture as it comes from the well flows through the coil, which is kept heated to temperatures ranging from 120 to 140 degrees Fahrenheit. A thermostat automatically prevents the temperature from reaching a higher stage than 140 degrees.

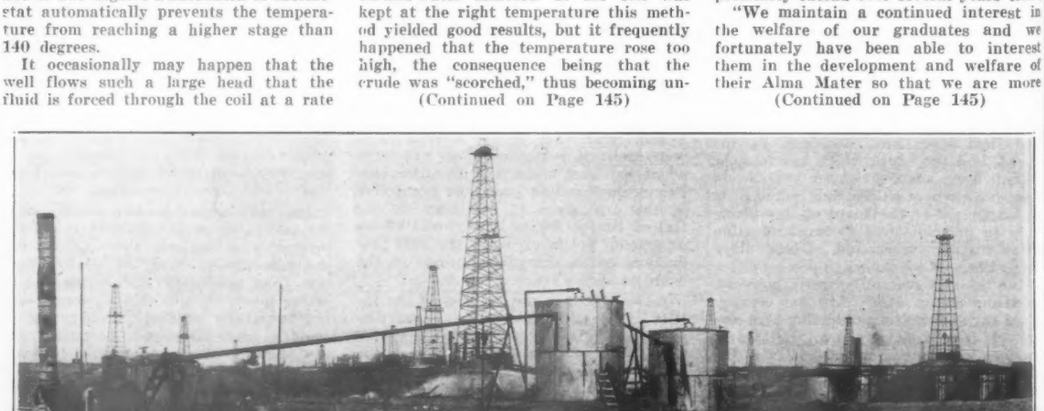
It occasionally may happen that the well flows such a large head that the fluid is forced through the coil at a rate too rapid to permit maintenance of a temperature high enough to break down the emulsions completely. In this case it merely is necessary to rerun the mixture at the right temperature before delivering the oil to the pipe line.

### Waste in Early Method

Application of heat is not new of course in the handling of oil-well emulsions, many operators in various fields having used steam for this purpose with varying degrees of success. Most of the pipe line companies require that crude oil shall not contain more than 2 per cent of basic sediment when it is taken into the line. In the earlier experimentation steam was turned directly into a tank containing the emulsion. This method presented difficulties and there was much waste.

An improvement in the utilization of steam was effected by introducing a steam coil into the tank containing the oil-and-water mixture. If the coil was kept at the right temperature this method yielded good results, but it frequently happened that the temperature rose too high, the consequence being that the crude was "scorched," thus becoming un-

(Continued on Page 145)



*Hook-up in Mission area for breaking down oil-field emulsions by the "hot-water" process.*

# Recovery of Oil by Air and Gas Lift

## Extensive Investigation Made of Various Phases of Subject Together with Repressuring of Depleted Oil Sands

### SUBJECT COVERED THOROUGHLY

The accompanying article is the first of a series on oil recovery by air and gas lift, repressuring of depleted sands, and gasoline recovery, compiled by the Bessemer Gas Engine Co. of Grove City, Pa. That company expended a large sum of money in the preparation of this and the succeeding articles, employing for the purpose R. H. Pence, who had been identified with the petroleum industry in California and who visited the principal air and gas lift operations in the country while compiling the article. S. F. Shaw, air and gas lift engineer of the Carter Oil Co., reviewed the manuscript after it had been prepared by Mr. Pence.

The following topics are covered in the accompanying article and those which will appear in future issues of The Oil and Gas Journal:

Early history of lift. Principle of lift. Advantages of lift. Air and gas lifts distinguished. General action of applied lift. Pressure conditions within well on lift.

Operation of the lift. Operating pressure. Position of lower end of eductor. Forces in the operation of the lift.

Conditions in the operation of the lift. Expansion of gas. Different types of expansion of gas. Pressure decrease within eductor. Solubility of air and gas in oil and effects. Slippage. Velocity. Efficiency. Factors affecting efficiency. Back pressure and ultimate recovery. Control of back pressure in lift.

Adapting lift to the well. Survey of well. Determining rate of production. Determining pressures at producing sand.

Installation of lift and calculations. Pointers.

Equipment. Location of plant. Compressors. Compressing gas. Cooling water. Handling plant gas. Distributing headers. Surface hook-up.

Special uses of the lift. Intermittent lift. Intermitters. Displacement flow. Stage lifting. Five spotting. Footpieces. Packers. Tubing catchers. Kick-off valves. Volume regulators.

Repressuring depleted sands. Pressure factors in production. Gas factor in production. Drive mediums. Selection of property to be repressured. Key wells. Pressures. Volume. Distribution of gas. Measurement of gas to wells. Capacity of plant. Producing. Back pressure. Success in repressuring.

Storage of gas in limited dry sands. Discussion. Estimates of costs.

Natural gasoline. Compression method of extraction. Absorption method of extraction. Plant operation. Compression vs. absorption. Stabilizing gasoline.

Measurement of gas. Orifice meter. Specific gravity of gas. Pipe line capacities. Pitot tube. Minute pressures of gas wells. Orifice well tester.

There are two recognized means of oil production; hydrostatic pressure, or water pressure, and the expansive force of the natural gas absorbed in and associated with the oil.

The former needs no discussion. Most sands produce principally by the latter method, hence we will confine ourselves to it. This natural gas in the oil sand flows toward this point of diminished pressure and because of its intimate association with the oil causes a simultaneous flow of oil. It will be understood then that the flow into the well is caused by differential between the pressure of the formation and the pressure in the well at the point of entrance. To tank the oil that enters the well at its depth, it must be lifted. The gas lift is a method of accomplishing this that is universally recognized and is rapidly gaining favor.

**Early History of Air and Gas Lift**

The possibility of raising water on the air lift principle was discovered by Carl Emmanual Loscher in 1797, but no practical application was made of the discovery until Crockford[1], in 1864, attempted to apply it to an oil well in Pennsylvania. The lift cannot be said, however, to have come into use until Dr. Julius G. Pohle, of Arizona, in 1886, patented and successfully operated the method in lifting water. In the late nineties. the lift was successfully in-

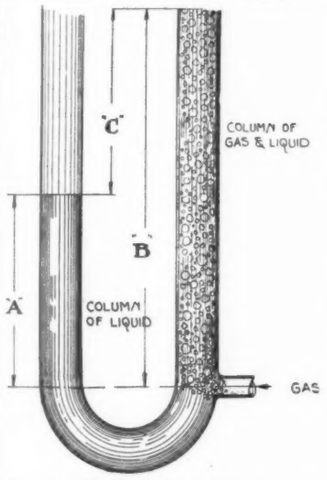



*Figure 1.—The injection of a gas at the point indicated produces a column of mixed gas and liquid B which has no greater weight than the solid column of liquid A. Thus column A balances column B and causes a portion of the liquid to be elevated through distance C.*

stalled in the oil fields of Louisiana, Texas, and at Baku, Russia, and about 1902 an installation was made near Bakersfield in California and operated for a brief period.

The method was given little attention and gained few installations during the next decade but around 1920 was revived and 1925 found it in considerable use throughout the oil fields. The development of the Seminole Field of Oklahoma in 1927, and the application there of the lift with a resulting record production of oil, brought the method forcibly before the oil fraternity.

**Principle of Operation**

There is no mystery or uncanny phenomenon connected with the lift. The essential principle involved is very simple, and rightly grasped, will not be difficult to understand and apply. (Figure 1.)

Suppose a U tube to be partially filled with a fluid as in the accompanying figure—then on resting, each column will balance the other. Let there be a gas injected in a port located as shown. The bubbles thus formed will displace an equal volume of the liquid and create a much enlarged volume in the one arm of the U tube, but of no greater weight than that of the supporting column. Therefore the height of the frothed column will be greater than that of the unmodified column, and to such extent as is denoted by C.

Let us consider this frothed column. At its bottom the bubbles are small, farther up the column we find them of increased size, and at the top of such size that the enclosing fluid can no longer retain them as bubbles for they burst. We conclude then that the density of the frothed column decreases as its top is approached. We further conclude that it is the expansion of the gas bubbles that causes a portion of the fluid in the frothed column to be elevated, and that the unmodified column supports this frothed column.

Conceive a body of fluid of sufficient depth, regardless of its volume. Suspend in this source of supply two vertical tubes, connected at or near their lower extremities, to a depth proportionate to the lift. The liquid will enter the open end of the submerged pipe and rise to the same height inside as it stands outside. In this condition it resembles the U tube at rest, for there is nothing to cause any movement of the liquid either upward or downward. Through one of these pipes we introduce a gas under pressure and allow it to escape at the base of the other. We thus have a lift, and the principle of operation, briefly described, is as follows:

The energy operating the lift is that energy in a volume of compressed gas released in a fluid column in the form of bubbles at or near the end of the submerged portion of the discharge pipe, and the driving force, causing the lift to operate continuously, is the unbalanced hydrostatic pressure in the discharge pipe resulting from a mixed column of fluid and gas bubbles of less specific gravity than the outside opposed column of unmodified fluid.

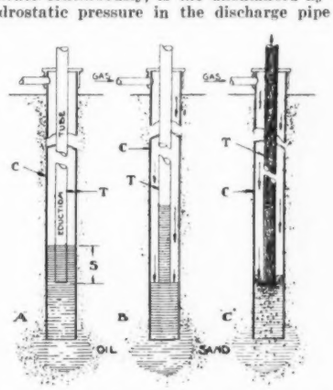


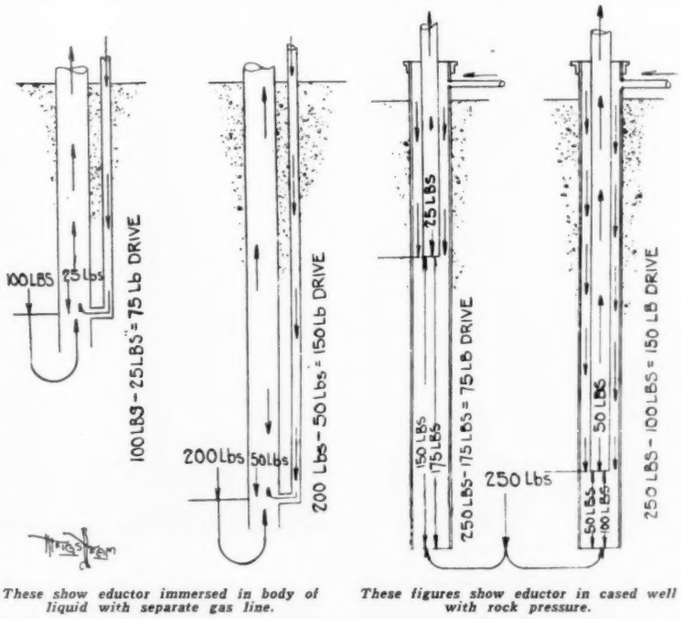

*Figure 2.—Sketch illustrating three stages of the gas lift. (After L. C. Uren.)*

**Advantages of the Gas Lift**

Under favorable circumstances the gas lift offers a means of stimulating the rate of production, so that a greater part of the total production of an oil-producing property is secured during early life. Shortening the period of realization increases the present value of oil-producing properties, but aside from this, a rapid rate of recovery is particularly desirable when competition is keen among neighboring producers, or where acreage is threatened by water incursion or gas drainage due to methods of recovery practiced on neighboring properties.

The gas lift provides a means of applying and maintaining back pressure on the reservoir rock, and by means of this controlling the formational gas-oil ratio. When gas lifts are so controlled as to produce oil with a lower gas factor than would be possible by other means, it is reasonable to expect that an increase in ultimate oil recovery will be secured. Due to the provision of mechanical power through gas compression in lifting the oil, a larger part of the gas energy developed within the reservoir rock is utilized in bringing oil into the well

(Continued on Page 154)




*These show eductor immersed in body of liquid with separate gas line.*

*These figures show eductor in cased well with rock pressure.*

*Illustrating force balancing Frothed Column and available driving force. (No other factors considered.)*

[1]Compressed Air Power, Daw, Pitman and Sons.

# Court Restrains Town Lot Drilling

## United States Circuit Court of Appeals Decision in Oxford Townsite Case Upholds Community Interest. Of Interest to California

ST. LOUIS, Mo., Apr. 15.—The United States Circuit Court of Appeals has upheld the validity of a city ordinance of Oxford, Kans., passed in June, 1927, following discovery of a pool of oil beneath the corporate limits of the town, limiting the erection of oil wells inside the city to one to each block.

Owners and lessees on property had brought an injunction suit asking that the city be restrained from enforcing the ordinance, contending that the ordinance interfered with and denied them their rights and privileges under the Federal Constitution.

The appellate court held that the State and city had the right to protect the community and that the ordinance did not deprive anyone of any rights of property.

The opinion is regarded as paving a legal way for any incorporated community to limit drilling orgies within their corporate limits. California especially, should be interested.

### Court's Opinion

The United States Court of Appeals in its decision on the case, Marrs, et al., vs. The City of Oxford, et al., said:

In Cause No. 8,268 it appears from the bill that plaintiffs, except Pickard, are owners of lots 10 and 11 in block 35 within the restricted area, and on June 29, 1927, they gave an oil and gas lease on the two lots to their co-plaintiff Pickard for a term of five years and as long thereafter as the lessee produced oil and gas or either from the premises, in consideration that the lessee would pay the lessors 1/8th of the net proceeds from the oil and gas produced. Without applying for and obtaining a permit from the city, as required by the ordinance, to drill and operate a well, the lessee began the drilling of a well on said lots within 75 feet from a well then being drilled in said block under a permit issued by the city to the Roxana Petroleum Corporation. He was arrested and fined several times for disobeying the requirements of the ordinance in not having a permit. He ceased operations for a while on account of these prosecutions, but later persisted and drilled the well to a depth of about 2,000 feet into the producing sand and was obtaining oil therefrom at the time of the hearing below.

In Cause No. 8,271 it appears from the bill that the two plaintiffs are the owners of a lot in block 87 within the restricted area, and on August 12, 1927, they obtained an oil and gas lease on block 24, also within the restricted area, for a term of five years and as much longer thereafter as oil or gas should be produced, in consideration of delivering to the lessors 1/8th of the production. They drilled a well on their lot in block 87, which was producing oil at the time suit was brought, and they had also drilled to a depth of 800 feet on block 24, but they did not apply to or obtain from the city a permit for either well, as required by the ordinance. There were arrests for drilling without permits in this case also, and fines imposed and threats of further arrests in both cases when the suits were brought. Both bills were dismissed on demurrer, then this appeal.

The bills further disclose that there are improvements in blocks 24 and 35. One side of block 24 abuts on the business street of the city, and there is one block lying between that street and block 35. These city blocks are approximately 300 feet square with streets on their four sides and alleys through them, and a well will draw the oil and gas in the producing sands from all directions for an approximate distance of 400 feet. Block 87 lies about six blocks from the business section, and the bill in cause 8,271 alleges that this block has no improvements of any kind upon it, that it lies on the farther side of a railroad right of way from the business section, it is surrounded by unimproved property and there are no improvements in close proximity. It is further alleged that the drilling and operation of the three wells will not cause annoyance or discomfort to the inhabitants of the city nor endanger them or their property. It appears that a derrick 75 to 80 feet in height, of wood or steel, was erected for the drilling of each well. The drilling of wells and pumping of oil is done with gasoline combustion engines. The bills allege that the plaintiffs have not and will not store the oil produced on the premises, but that they have carried it through pipes and will continue to do so to tanks outside of the city limits. The city contains a population of about 850.

### Power of City

The State statute grants to the city of Oxford full power to enact ordinances for the preservation of the health of its inhabitants, the maintenance of peace, good order, good government and the general welfare of the city, its trade, commerce and manufacture, and to enforce all such ordinances by fines, forfeiture and penalties upon its inhabitants and others for the violation thereof, not exceeding a fine of $100 for any one offense. Section 1 of the ordinance makes it unlawful for anyone to drill an oil or gas well within that part of the city described by boundaries or to assist in the work, or to assist in any way in the prosecution of any such well without a permit for such well first having been issued by the city. Section 2 prohibits more than one well in a city block and Section 13 defines any violation to be a misdemeanor and fixes the penalty at a fine of $100 and declares that each day's continuance of the violation shall be a separate offense. These are the sections under which some of the appellants were prosecuted, and they say further prosecutions against them and their employees are threatened.

The plaintiffs in Cause No. 8,271 first brought their suit in the State court, and failing there to obtain injunctive relief they appealed. On that appeal the Supreme Court of Kansas held that the ordinance here under consideration was passed by the city pursuant to power conferred by the State statute. Ramsey v. City of Oxford, 261 Pac. 572. They then brought this suit in the court below.

### Police Power

The police power is an attribute of sovereignty to be exercised for the public welfare, and it has been authoritatively said: "* the possession and enjoyment of all rights are subject to such reasonable conditions as may be deemed by the governing authority of the country essential to the safety, health, peace, good order and morals of the community." Crowley v. Christensen, 137 U. S. 86, 89; Reduction Co. v. Sanitary Works, 199 U. S. 306, 324. Also, "that all contract and property rights are held subject to" a fair exercise of the police power. * * * "And it is well settled that the enforcement of uncompensated obedience to a legitimate regulation established under the police power is not a taking of property without compensation, or without due process of law, in the sense of the Fourteenth Amendment. * * The contention that the statute in question denies to plaintiff in error the equal protection of the laws is not seriously pressed and is quite unsubstantial." C. & A. R. R. Co. v. Tranbarger, 238 U. S. 67, 77, 78. Necessarily these regulations will encroach, when the power is exercised, on private rights; but that does not render them void. The power has its limitations and when submitted for judicial review it must appear that its exercise appropriately affords protection to the public against threatened evils. Arbitrary and unreasonable regulations, clearly ineffective in accomplishment of the claimed public interest, will be stayed; but the presumption is in favor of a law or ordinance passed in the exercise of the power, until the contrary is shown. In Dobbins v.

(Continued on Page 65)

# Oil Heating Institute Reorganized

## Annual Convention of American Oil Burner Manufacturers Association Predicts Record Sales in 1929

By A. E. Mockler
*New York Bureau, The Oil and Gas Journal*

NEW YORK, Apr. 13.—Featuring the annual convention of the American Oil Burner Manufacturers' Association at the Pennsylvania Hotel here this week was the announcement of completion of the reorganization of the Oil Heating Institute into a corporate entity. Haldeman Finnie, vice president and general manager of the Timken-Detroit Co., was elected president of the institute, other officers being, vice president, Lionel L. Jacobs; managing director, Trell W. Yocum; and secretary, E. Earl Newsom. Directors were elected as follows: J. C. Johnson, Walter F. Tant, A. E. MacInnis, W. C. McTarnahan, E. M. Fleischmann, Lionel L. Jacobs and Haldeman Finnie.

Numerous important problems of production patents and merchandising policy were taken up during the progress of the convention, which ran for three days. Questions relating to patents and amendments to the organization's rules were discussed at the annual directors' meeting, which was attended by J. C. Johnson, E. M. Fleischmann, Walter F. Tant, W. S. Ray, H. Finnie, E. P. Bailey, L. L. Jacobs, C. H. Chalmers, W. T. Koken, L. D. Becker, Edward Blake, G. P. Kittle, George Bullock, A. E. MacInnis, I. M. Nelson, R. S. Bohn, M. E. Simpson, W. Schwan, O. D. Ward, J. W. Scott, W. S. Schroeder, Trell W. Yocum, Harvey Dever and J. H. Hirsch. Reports were made by J. C. Johnson of the executive committee; Harvey Dever, for Mr. McTarnahan, on research and uniform oil specifications; Lionel Jacobs on market research; Edward Blake on dealer and sales training course, and A. E. MacInnis on membership in the manufacturing division, providing for new qualification for members.

J. C. Johnson, president of the American Oil Burner Association, first speaker in the business session called attention to the excellence of the exhibits and to the great number of registrants, predicting that 1929 would witness greater sales than any previous year. He reviewed briefly the activities of the association, pointing out the tremendous strides made. "In 1921," he said, "there were only 12,500 domestic burners in use, while at present there are more than 400,000 installations."

Mr. Johnson stressed the importance of developing local dealer organizations and of rapidly extending the use of better selling methods. He characterized as the outstanding development of the year the general acceptance of oil heat by the American public.

W. R. Boyd, Jr., executive vice presi-

(Continued on Page 156)

—Photo by Underwood and Underwood.

*Officers and directors of the American Oil Burners Association. Left to right, seated: I. M. Nelson of Philadelphia; J. H. Hirsch of Chicago; L. D. Becker of New York; C. H. Chalmers of Minneapolis; and George Bullock of New York. Left to right, standing: A. E. MacInnis of Peoria, Ill.; W. F. Tant of Detroit; Edward Blake of Pawtucket, R. I.; Trell W. Yocum of New York; R. S. Bohn of New York; and Werner Schwan of Dallas.*

# Wilbur Explains Policy on Permits

## Present Prices Bring No Adequate Return in Royalties or to the Industry. Recognition of Equities Discussed

By Charles E. Kern
*Washington Bureau, The Oil and Gas Journal*

WASHINGTON, D. C., Apr. 15.—The letter from Governors George H. Dern of Utah, Frank C. Emerson of Wyoming and William H. Adams of Colorado, discussing the new Federal oil policy, which was sent to Washington some days ago, has been answered by Secretary of the Interior Wilbur. An answer was delayed pending a report in the case of The Texas Company's group development in New Mexico by the special committee appointed to consider equities in oil leases and permits. This decision has been approved by Secretary Wilbur and covers some of the points raised by the governors. His letter to the governors follows:

"I have received from the President your joint letter of March 30, 1929. I have given careful consideration to the views you express concerning the new Federal oil conservation policy. It is, of course, the instruction of the President and the desire of myself to deal fairly with permittees; arbitrary action will not be taken where equities have accrued and where development has been undertaken in good faith. The government's program, however, must be general in its scope, as the distribution and use of oil is not confined to areas where actual production occurs. The simple purpose of the government is to reserve as much oil as possible against the time —unfortunately not far distant—when our national supplies diminish. I am hopeful that with readjustments following the inauguration of the present policy anticipated hardships will not occur, and that there will be no material injury to any particular section, but rather future benefit to the whole country, and it is my view that no part of the country will benefit more than your states. Your oil resources are now being dissipated at prices which bring no adequate return to the Federal and state governments in royalties, or to the industry.

**Moratorium Discussed**

"Since I issued Order No. 338, the policy as outlined therein has been amplified by approval of the findings of the special committee appointed to consider equities under existing permits. This committee is composed of E. C. Finney, Solicitor, Department of the Interior; William Spry, Commissioner, General Land Office, and George Otis Smith, Director, Geological Survey. I am inclosing a copy of their report for your information. You will note that your first suggestion, covering a moratorium for drilling operations when conservation would prompt such procedure, is discussed in the answer to question 5, as follows:

"As to leases when issued after discovery of oil or gas, the secretary can and should relieve from drilling additional wells or from the production of oil from existing wells upon request of the lessee, and this should be the procedure, the relief in each case being made subject to such conditions as are justified. As to approved existing permits in good standing, the law contemplates development and drilling on permits with diligence to a discovery. Cases may arise, however, where, because of existing or threatened excess production or for other reasons in the public interest, the Secretary of the Interior may, on his own initiative, request cessation of development operations in specific areas, such cessation to be accompanied by equivalent extension of time or suspension of permits.

**Recognition of Equities**

"Your suggestion that 'recognition of equities that may have been established, both in applications for permits and in existing permits, through expenditures of money and effort in geologizing structures, reconciling conflicting interests, and otherwise providing a situation affording sound basis for development,' has been incorporated in the present policy so far as existing permits are concerned. However, it has never been the practice to recognize equities in applications for permits arising out of expenditures made before the permit issued. The number of instances where such equities might be claimed legitimately are believed to be so rare that an exception to the rule would not seem to be advisable under the present policy. If applicants have undertaken to drill on the public domain before they have been granted a permit, they did so upon their own responsibility and without authority of law. Efforts to reconcile conflicting interests before filing an application for permit, of course, could not be an equitable ground for relief from the government's standpoint. Permittees, however, are in a different class. They have been recognized by the department as having rights under the law, and every effort will be made to protect them. The special committee appointed by me will act upon every permit in which equities are claimed by the holder. This committee has just rendered a decision, approved by me, in a group development of The Texas Company in southeastern New Mexico, which will indicate the attitude of the department in handling these questions coming before it for decision. Under this action, authorization has been given for the filing of five applications for leases, and 15 permits have been continued in full force and effect, subject to future compliance with the law.

"In answer to your third suggestion that 'consideration of equities of permittees as to preference right to lease the remaining area covered by a permit, in addition to the 25 per cent of the area subject to mandatory lease,' the following is quoted from an announcement by me on April 9, 1929:

"Under the present policy, leases would only be granted for one quarter of the area included in each permit, which is the amount mandatorily required by the leasing act upon discovery. Lease of the remainder is discretionary and will not issue upon the application of the permittee unless and until such action is required in the public interest. When it is determined to lease the remaining areas, the permittee in each case will be entitled to a preference right to a lease under Section 14 of the leasing act at such royalties and under such conditions as may be prescribed by the secretary under the law and regulations.

"I shall be very glad to keep in mind the situation with reference to the Rocky Mountain States, as outlined in your letter, in the future consideration of the oil policy. I hope you will feel free to make other suggestions from time to time as developments occur."

**Decision in Texas Company Case**

The Department of the Interior has also issued the following statement:

"The Secretary of the Interior has approved the recommendation of the special committee with regard to the petition of The Texas Company for continuation of its program of exploration on public lands contained in 78 oil and gas prospecting permits in southeastern New Mexico. This drilling program, known as "group development," was undertaken some three years ago under agreement with the department, and the original

(Continued on Page 120)

# Order Upset Rocky Mountain Area

## Governors and Oil Operators Disturbed by Interpretation of Hoover Policy in The Texas Company's Application

By Tolbert R. Ingram

DENVER, Colo., April 15.—The gloom which encompassed the oil industry in the Rocky Mountain area following the announcement by President Hoover of his administration's new policy on prospecting for oil and gas on the public domain deepened into a cloud of depression after the decision of Secretary Wilbur upon the application of the Texas Production Co. for the extension of its permits in New Mexico. The precedent thus established has resulted in what one oil man describes as a complete blowup of prospecting operations on the public lands with all that means to permittees, oil operators, communities and commonwealths.

The speaker did not mean by "blowup" that all operations are to cease or that a fight for equities will not take place, but that large investments have been cut out from under the industry, that precedents have been thrown to the winds, that drilling campaigns are disorganized and up in the air and that the whole situation has been thrown into the greatest confusion. Prior to the latest decision there had been a feeling that the administration might change its attitude, that relief might be obtained through the courts, or that congressional action might straighten out the muddle. It is pointed out now, however, that it is the intention of the Department of the Interior as disclosed in the Texas Production Co.'s case to go ahead full force with its new policy and to hold down the restrictions to the most technical details possible. While congressional and court actions of some kind are considered almost certain, there is a strong belief in some quarters that the mineral leasing act grants so many discretionary powers to the Secretary that he may be able to carry out the new policy, in effect, regardless of anything less than a change in the laws.

**Had Strong Case**

The Texas Production Co.'s case was considered a particularly strong one. The company drilled 11 wells in New Mexico upon permit land under the co-operative or group development plan. It was searching for the structures which are covered and cannot be discovered by ordinary geological methods. Each well was spotted so as to benefit the holdings of the particular group located around it. The company had expended $600,000 in this exploration work. Its application for extension of the permits, of which there were 78, was made prior to March 12 when the new rules went into effect. The co-operative agreements had been approved by the department, the company was acting under rules of procedure established under three administrations, and had followed instructions in drilling the wells. It had offered to drill as many wells as the department considered necessary, or not drill any at all, and had drilled at locations agreed upon.

The Secretary's decision approved the findings of the special committee of three which had been appointed to review the

(Continued on Page 119)

—Photo. Underwood and Underwood

*Members of the special board appointed by the Secretary of the Interior to survey all existing oil leases according to the recently announced conservation plans of President Hoover photographed at their first meeting in Washington today. Left to right: William Spry, Commissioner of the Land Office; E. C. Finney, Solicitor of the Interior Department; and Dr. J. D. Sears, acting Director of the Geological Survey.*

# Geologist's Tour of Persian Fields

## Frederick G. Clapp Continues His Account of His Journey of Inspection for the Persian Government

By Frederick G. Clapp*

Some Middle East philospher has remarked that any person who goes to Persia must either have learned patience before going there, must learn it whilst sojourning there, or will sojourn and leave the country without having learned it. Perhaps I had an advantage in Chinese and Spanish American experiences and was thereby prepared for the inevitable. Certainly the "manana" of South America is insignificant when compared with the "pas-farda" (day after tomorrow) of the Persians. These kindly appearing children of the Middle East are past masters in procrastination.

Therefore, recommendations that immediate action be taken in oil matters, as on any matters whatever, secured little attention by that government. When I say that it was not until the spring of 1928, over six months after arrival in Persia, that I was permitted by the government to accept on its behalf the Anglo- Persian Oil Co.'s cordial invitation to visit and inspect the southern and western oil fields, those persons who know Persia will not be surprised.

*The beginning of the "ladder"—the 5,000-foot descent in altitude from the Plateau of Iran.*

### Obstacles Encountered

The intervening months naturally were not idle ones. Much might be written on the obstacles encountered and the technical and political questions that were tackled and solved during that time. I might tell of laborious office work, of advice to ministries, framing of proposed oil and mining legislation, and plans for an administration of mines in the Ministry of Public Works. I might describe my descent from Iran's barren plateaus to the moist lowlands situated north of the great Elburz Mountain range, of long traverses by motor, on foot or mule-back over the Caspian coastal plain and into the foothills, and of mud, rain, swollen rivers and other difficulties encountered in that part of Persia. I might write the story of Semnan and its cleverly conceived enterprises, oil schemes, strategies and conspiracies which have involved Persian politicians for several decades, but of which little practical result has been achieved by the Persian and Russian promoters. I might tell of the numerous cordial invitations from Persian hosts to dine with them in true Persian style, with or without forks and knives, with or without table and chairs, as the case may have been, and of the eagerness or reluctance with which the invitations were accepted. I might tell of my own house in Teheran, where for short periods I was permitted to live in as fair comfort as a man can live at a distance of 10,000 miles from his family. I might tell of rambles, sports, dinners and receptions in Teheran. I might describe the beauties and blemishes, virtues and vices, pros and cons of Teheran—a capital city of over 200,000 inhabitants in a nation of less than 10,000,000. I might give scientific treatises on numerous short trips made out of Teheran in order to furnish a foundation for geological studies that were later to be made by myself or others. Books might be written of the intrigues of Teheran politics and their effect on oil researches and developments. But there is no time for these digressions now, for I have promised to give a brief account of my journey and it will be necessary to pass by all details until a later writing.

Some laymen have been inclined to criticize the outfit of a petroleum expedition as being too voluminous. One Australian weekly journal went so far as to compare my own modest attack on the untraveled desert areas to "an Indian rajah going on a hunting trip." It is consistent to meet all such irony by the explanation that a geological or technologic expedition on any matters connected with oil is of greater importance than a mere hunting trip and must necessarily carry a greater amount of equipment.

Nevertheless, we were prepared for hunting, as will be told shortly. Notwithstanding the fact that the particular trip was to be a reconnaissance one for the purpose of familiarizing myself with the southern and western oil fields and their problems, it was necessary to be prepared for certain geological and engineering work in case it should become necessary for any reason. Conditions of travel are crude in Persia, and any important expedition made outside of the principal cities should be furnished with a full complement of equipment and men.

### Needed Spare Car

A rule adopted by most of the American and European advisers in Teheran is never to travel with merely one automobile, for in case of accident one may be stranded many miles from a village and hundreds of miles from garage facilities, and the consequences of being long without water and other sustenance may be serious. That the presence of an extra car with food and spare parts constitutes a desirable form of insurance had been proved true again and again in the mud holes of Mazandaran during the preceding winter, at which times the cars broke through bridges, became bogged in mud holes and broke their springs at intervals. During one period of two weeks I recall that a car was obliged to return on the road late every night to hunt for the other car, which was daily found stranded at some distance from its destination with some unthought-of difficulty. After experience in Persia and Iraq I may repeat the warning that was instilled into me on arrival there: Do not try to travel anywhere without having at least two automobiles, unless perhaps on the main Khanaqin-Teheran or main Teheran-Pahlevi road or in the developed oil fields.

In Persia servants may be so useful at times and are so cheap that it is desirable to carry along those in whom one has confidence. It is absolutely essential (outside of the oil fields) for one to carry his own cook. Chauffeurs who are mechanics are a necessary evil. Although I drive all kinds of cars with facility and can make the usual road repairs in civilized countries, an experienced chauffeur-mechanic for every car is desirable in the Orient. Most travelers also carry an "assistant chauffeur" sary. In addition, my secretary-interpreters—Ismail Khan Amir Shah and Farajolah Khan Dehdashti—were daily useful in interviewing the natives, describing localities and otherwise in their (to whom they pay a salary as high as 30 cents per day) in addition to the regular ones, for help may often be necessrespective capacities. Consequently a Dodge touring car, Graham truck and eight men besides myself were found none too considerable.

On this particular trip I had a guest—Elgin Sherk of the American Mission in Teheran. Having completed his valuable labors on behalf of Persian youth he was taking a short vacation trip to Isfahan and Shiraz before starting for the United States, and his cheery presence furnished a pleasing novelty throughout more than a week of an oil man's journey.

### Plateau Journey

Thus, after weeks of preparation, we were off by the Shahabdulasim Gate at dawn on "No-ruz" (the Musselman New Year's Day, Farvardine 1, 1307), Wednesday, March 21, 1928. The massive snowy Elburz Range with the white cone of mighty Mount Demavend rising in the northeast to a height of 18,600 feet above sea level, was left behind, as the gravel plains or outwash fans of the Iranian Plateau were traversed at between 3,000 and 5,000 feet above the sea. Geographic observations, even without the economic objectives, would render the plateau journey an enviable one.

The geology also was interesting, for numerous anticlinal ranges rise out of the plateau to altitudes of 5,000 to 10,000 feet; while, far to the west the Zagros Mountain system bounds the plateau on its western side, some parts of that range standing 10,000 to 12,000 feet in altitude. No part of the plateau west of the longitude of Meshed and Kerman is known to descend to less than 2,000 feet in altitude. The greater part of this area, more than 600 miles in diameter, forms an uninhabited desert, much of which is the Dasht-i-Kavir in which central Persian rivers lose themselves.

### Unfavorable to Oil

None of the plateau region is known to be oil bearing, though the formations consist largely of Tertiary and Cretaceous sediments. Between Teheran and Kum some of the anticlines contain basaltic cores, with which are associated sediments that may be of Permo-Carboniferous age. In the vicinity of Isfahan and from there southward some anticlines are composed of Cretaceous limestones, but isolated areas of Paleozoics are reported in the mountains to the west. Although I have nowhere studied the oil possibilities of this plateau region in detail, the opinion of geologists who have done so has been generally unfavorable for various reasons.

Some travelers motor from Teheran to Isfahan in one day, but I stopped the first night at Delajan, the best place on the road, 36 miles south of Kum. Isfahan, the fictitious birthplace of Haji Baba (James Morier's creation—the best exposition of Persian character ever writ-

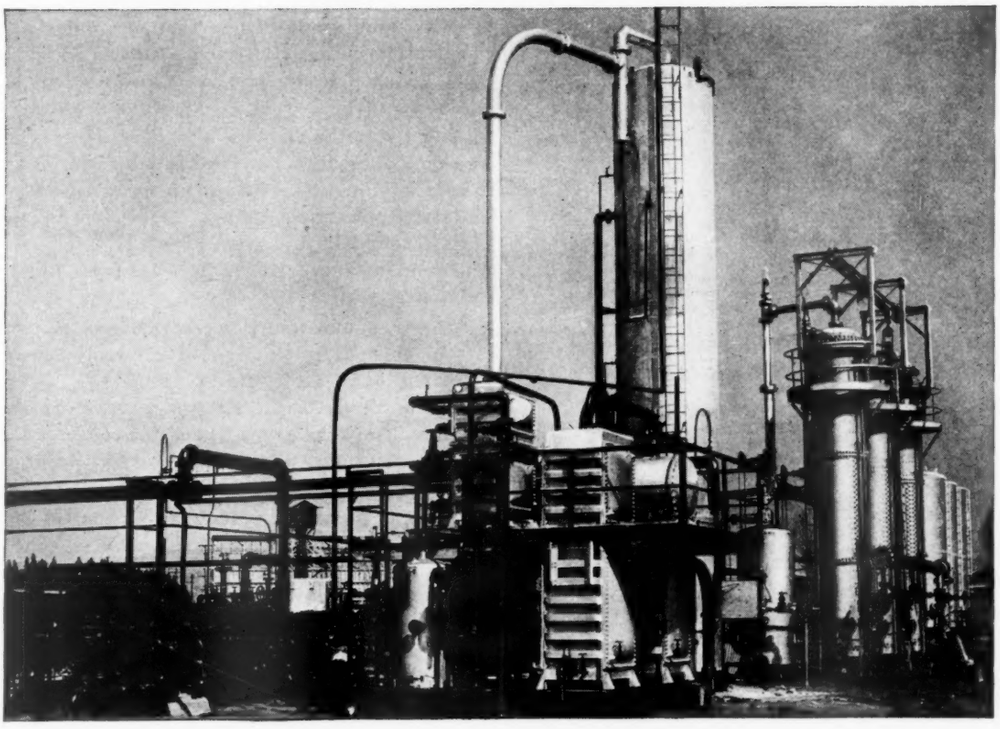
(Continued on Page 120)

*Lunch at a "chai-Khaneh" or tea house near Perseopolis.*

*Consulting Petroleum Engineer, 50 Church Street, New York City, and 68 Quai d'Auteuil, Paris XVI, France—Second article.

The first article in this series written specially for The Oil and Gas Journal was published in the issue of December 20, 1928. Others will follow.

# REDUCING PRODUCTION COST



*A Plant erected to treat gas from an industrial gas line. This plant is handling 30,000,000 cu. ft. per day, the gasoline content of the gas being rather low.*

## SOUTHWESTERN ABSORPTION PLANTS

Due to the high heat transfer rate . . . automatic control . . . Southwestern Absorption Plants operate with exceptional efficiency and *cut the production cost of gasoline.* Built for any capacity, every size compact and accessible, Southwestern Absorption Plants make *additional profit* for manufacturers of gasoline.

**SOUTHWESTERN**

HEAT EXCHANGERS
TUBE STILLS
ABSORPTION TOWERS
ABSORPTION PLANTS
COOLING TOWERS
PLANT DESIGN
WATER TUBE BOILERS

## SOUTHWESTERN ENGINEERING CORPORATION

606 SOUTH HILL STREET
LOS ANGELES, CALIF.

605 MAYO BUILDING
TULSA, OKLAHOMA

117 LIBERTY ST. • NEW YORK CITY • ROOM 1606

ROOM 1217 MAGNOLIA BLDG., DALLAS, TEXAS

426 TRANSPORTATION BLDG.
MONTREAL, CANADA

# The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

Published Weekly by
THE PETROLEUM PUBLISHING COMPANY
114-116 West Second Street
TULSA, OKLA.

Established as an International Publication in 1910 by Patrick C. Boyle.


President - - - - - - - - - - - - Frank T. Lauinger
General Manager - - - - - - - - - John M. Egan
Editor - - - - - - - - - - - - - James McIntyre
Managing Editor - - - - - - - - - Andrew M. Rowley
Refinery Editor - - - - - - - - - - C. O. Willson
Technical Editor - - - - - - Charles K. Francis, Ph.D.
Petroleum Engineering Editor - - R. Van A. Mills, E.M.
Associate Editor - - - - - - - - - W. T. Anderson
Associate Editor - - - - - - - - - W. T. Ziegenhain
Associate Editor - - - - - - - - - Thomas F. Smiley
Advertising Manager - - - - - - - E. Klappenbach
Circulation Manager - - - - - - - - J. P. Mulkern

DISTRICT ADVERTISING OFFICES
C. L. CAIN - - - - - 101 Park Ave., NEW YORK CITY
L. AUSTIN DEVORE, 1328 Peoples Gas Bldg., CHICAGO, ILL.
ALVIN E. LOEFFLER, State Theater Bldg., PITTSBURGH, PA.
C. R. JOHNSON - - - - - - - - - - - - - - - - - -
- - 730 Petroleum Securities Bldg., LOS ANGELES, CALIF.

TERMS OF SUBSCRIPTION
(By Mail, Postage Prepaid)

| | | | |
|---|---|---|---|
| Single copies | $ .15 | One year (in United States) | $6.00 |
| Three months | $2.00 | One year (in Canada) | $7.00 |
| Six months | $3.00 | One year (foreign countries) | $7.00 |

ADVERTISING RATES ON APPLICATION
Telephones: 6291-6292-6293
Remittances by Checks, Drafts, Express or Postal Money Orders should be made payable to
The Petroleum Publishing Company
Cable address, "Oilgasnal"

MEMBER AUDIT BUREAU OF CIRCULATIONS


## PLAIN SPEAKING

There is need for some plain speaking about the present situation regarding oil conservation.

If it has taken a more hopeful turn, as currently reported in the daily newspapers, it is simply because the Federal Oil Board has undertaken to interest the governors of the leading oil producing states personally in the need for conservation.

But so far as an actual plan is concerned the Federal Oil Board and the regional committees of the American Petroleum Institute are not talking about the same thing.

The plan suggested by the Institute called for the curtailment of production for the remainder of the year to the same quantity as was produced in the same period last year.

The Oil Board says that "to solely close off production temporarily to relieve present congestion and stop the immediate waste of gasoline to fuel would not affect the real problem—that is, the long view wastes."

The Federal Board suggests instead that what is needed is "the initial control of development through the control of drilling to the end that upon discovery of a new oil pool a plan for its development should be established which would prevent the waste of gas, the consequent loss of gas pressures and its serious effect upon the total yield of the pool, and to prevent other great losses which arise from flush flows due to periodic overproduction from feverish competition and offset drilling, with its necessary consequences in unnecessary diversion of oil from gasoline to fuel."

To which Chairman R. C. Holmes of the Institute general committee replies that "the desirability of control in drilling and field operations has to some extent been adopted where possible in new areas where wildcatting is going on and the approval of the board of this procedure in principle will do much to stimulate further efforts along these lines" but "we think it generally agreed, however, that any action which does not contemplate such control of production here and abroad as will encourage all refiners to produce the maximum rather than the minimum yield of gasoline from all crude runs is not in effect a full and substantial measure of conservation."

And while he hopes that the contact between the board and the governors of oil-producing states will be helpful in working out a definite program, Mr. Holmes adds that "we would not expect that program to differ materially in its fundamentals from the plan which the industry has already submitted."

The Oil Board's suggestion for control of drilling is accompanied by the admission that there are "no constitutional grounds upon which the Federal Government could impose such regulation of drilling but the sole legal authority lies within the state governments themselves."

The Oil Board further recognizes that individual state action without co-ordination would not cover the question. The board then suggests interviewing the governors of the three or four leading oil-producing states "to learn if it is not possible for them to enter upon an Interstate Compact under the provisions of the constitution authorizing such compacts to which the Federal Government through congressional action would be a party", through a joint board.

The character of such a compact, the board naively acknowledges, "would need much consideration". The history of efforts to secure joint state action on uniform laws, a gasoline tax and other subjects is not encouraging. Years have passed without anything being accomplished.

President Roosevelt's high hopes from "the House of Governors" were never realized.

Unless all experience is contradicted the country may be worrying about underproduction of oil long before overproduction is corrected by an Interstate Compact.

But if the Oil Board's representative can interest the governors individually in the general need for conservation of oil, their study of the situation may lead to a prompter program that will conserve the oil of today as well as of tomorrow.

The Oil Board concedes that its control of drilling plan could not be wholly applied to existing pools, yet the overproduction that is causing present waste is coming from them and is likely to continue for some years unless checked.

Chairman Wilbur writes the governors of the Rocky Mountain States that "Your oil resources are now being dissipated at prices which bring no adequate return to the Federal and State Governments, or to the industry."

What is true of the oil resources of the Rocky Mountain States is just as true of prices for oil in every other field. It is being dissipated without adequate return. Secretary Wilbur himself deplores "the immediate waste of gasoline to fuel" and is very properly reminded by Chairman Holmes that "any action which does not contemplate such control of production here and abroad as will encourage all refiners to produce the maximum rather than the minimum yield of gasoline from all crude runs is not in effect a full and substantial measure of conservation."

Unit operation of new pools, indicated by the Oil Board, is recognized as an ideal towards which, as Chairman Holmes says, the industry is working. But immediate relief is what is required by the industry and the common sense solution is to keep production within the limits of demand, the advice, by the way, which the Government is constantly urging upon the farmers of the country.

Secretary Wilbur's letter to Mr. Holmes says "the board is advised that any such action on the part of the institute would possibly constitute a violation of the Sherman Act."

The board, it will be noted, says "possibly". It is, of course, as unable to rule on the law as it was to approve the institute's plan for curtailment.

Whether the Sherman Act bars the oil industry from solving its overproduction in the same manner as the Government urges upon the farming industry can be determined only by the Supreme Court of the United States.

It would seem to be up to the industry to decide whether it would rather be scared to death or try to save itself.

The regional committees should go ahead with the institute plan, meanwhile welcoming whatever assistance, if any, the Federal Oil Board's mediation with the governors of the oil-producing states may produce.

# A Cold Fact!

Expansion and contraction due to greatly varying temperatures as well as the extremely high pressure under which it will operate is provided for on the Amarillo, Texas to Denver, Col. Natural Gas Line thru the use of Dresser Couplings

S. R. DRESSER MFG. COMPANY
BRADFORD, PENNA.

# DRESSER COUPLINGS
# *DOMINATE!*

# DOMESTIC HEATING OIL ASSURED FOR LIFE OF BURNERS BEING BUILT

By W. R. Boyd, Jr.*
Executive Vice President, American Petroleum Institute

A few years ago, you, who were engaged in the oil burning manufacturing business, could not understand why the oil industry should show any hesitancy whatever in lending unqualified support to the development of your industry. The main thing you wanted was for the oil companies to assure the home owner that there was plenty of oil. You probably wanted them to go a little farther and say there was plenty of oil at a price which would represent less cost than coal burned in the furnace. That the oil industry showed any hesitancy when you offered it a great new market for a petroleum product, potentially as alluring as the automobile, was probably to some of you the foremost mystery of the age.

You were inclined to be impatient when it came to the oil industry's attitude, but, in my judgment, your impatience was not fully justified.

It must be appreciated by now by many of you who have been compelled to study problems of the oil industry, that much which you expected in the early days could not then be forthcoming. Moreover, as you have improved on your equipment and methods, betokening the fact that such changes were the natural evolution and necessity of your industry, you are in a better position now to realize that some of your expectations as regards the petroleum industry were somewhat premature.

But, even though you may dispute the soundness of the reasons why the oil industry as a whole lagged behind you gentlemen in the general recognition and wholehearted support of the domestic oil burner business, you must now admit that that condition has largely changed and, in fact, has been replaced by one of endorsement based on two factors: First, your achievement in developing better and more suitable equipment and your ability to chart a previously uncharted potential market for petroleum products, and, second, the oil industry's accumulation of an impressive above-ground storage and, in addition, its development of what might be termed an unusually large underground oil reserve.

**Consistent Sales Policy**

The establishment of a consistent sales policy by oil companies is dependent upon some reasonable solution of the major oil production problem. So much has been learned in recent years as to oil sources and recovery methods, through bitter experience and brilliant technological application, that, combined with the awakening consciousness favoring co-operative enterprise to effect stabilization of a naturally fickle raw material, the oil industry now knows that a much larger supply is presently available and so must

(Continued on Page 145)

*Before American Oil Burner Association, New York.

# High Spots in Field News

**NORTH TEXAS**

Jack County has 60-bbl.-an-hour well.

**EAST CENTRAL TEXAS**

Important southwest extension to Boggy Creek Field.

**KANSAS**

Gypsy Oil Co. wildcat in Sumner County, just north of Oklahoma line, makes 60 bbls. an hour with 5,000,000 feet of gas daily.

**GULF COAST**

Two completions on DeWalt Dome best of week. Small wells at Raccoon Bend and Barbers Hill.

New gas producing horizon opened at Raccoon Bend.

**NORTH LOUISIANA-ARKANSAS**

Offset to Ohio Oil Co. well in Champagnolle shows large water content and less initial production.

Wildcats confirm East Carroll and extend Richland gas fields.

**SOUTHWEST TEXAS**

Gulf Production Co.'s well in Joe Bruner Field best producer in Austin chalk.

Unit operation in Guadalupe County plans test to Edwards.

**OKLAHOMA**

Simms Oil Co. wildcat test in southern Pottawatomie County points to new pool.

Well west and south of St. Louis-Pearson flowing 80 bbls. an hour at 3,698 feet.

**ROCKY MOUNTAIN AREA**

New strike on Rattlesnake Dome, New Mexico. Continental Oil Co. gets production in Lower Pennsylvanian at 6,771 feet.

George Getty's No. 4 Dooley, 15 miles east of Carlsbad, reported flowing 1,464 bbls. first day from 10 feet of sand topped at 1,345 feet.

**WEST TEXAS**

Gulf Production Co. discovery in Ward County made 435 bbls. of 39 gravity oil in 6½ hours; regarded as opening important sand pool.

Reeves County well salty disappointment.

New pool east of Pecos Valley Pool.

Crockett County well showing for producer.

Hendricks Pool potential drops 63,348 bbls. in 15 days. Winkler County proration reduction responsible for 24,000-bbl. drop in allowed runs.

**CALIFORNIA**

California plans to start curtailment. Operators contemplate ultimate reduction of 145,156 bbls. daily.

Barnsdall Oil Co.'s No. 4 Bell-Luten at Elwood came in flowing 4,500 bbls. of 38.4 gravity naturally and 1,300,000 feet of gas. Most westerly producer.

No definite arrangement on Kettleman Hills has yet been reached, but will be.

Rhode Petroleum Co.'s well, extreme southeastern Santa Fe Springs Field, blew in doing 3,000 bbls. from Clarke zone at 7,400 feet. This well proves up entire eastern end of structure for big production.

Union Oil Co.'s No. 10 Howard, near apex, blew in flowing 5,000 bbls. during water test at 6,565 feet from O'Connell zone just below Buckbee producing sand and overlying new Clarke horizon.

## Device Is Designed to Indicate Direction of Flow from Formation

By W. A. Spinney

L. E. Trout of Wichita Falls, Tex., has invented a device designed to determine the direction of the principal flow from a producing formation into a well. The device consists of a cylinder of screen pipe about 3 feet long which can be attached to the sand line and lowered to the bottom.

Inside the screen pipe cylinder there is mounted a vane, pivoted at both ends, extending vertically from end to end and free to swing in whatever direction the flow moves it.

Below the vane is a compass. When the device is lifted off bottom the vane and compass are locked in place so that the vane is oriented with respect to the compass. This indicates the direction from which the principal flow has taken place.

The device has been tried in some 50 or 60 wells of comparatively shallow depth and these tests indicate that the flow of oil and gas into a well is usually in a down dip direction and also from the areas of most open textured sand.

Of what practical value the instrument may be to the oil industry is yet to be determined. The information furnished the operator may serve as a guide in his development work by indicating the most favorable direction in which to extend drilling. It may serve to locate the crests of subsurface structures or areas of comparatively open-textured sand. It may also indicate the direction in which areas of relatively high, or relatively low gas pressures are situated and the direction of fluid migration from the high pressure toward the low pressure areas.

The instrument is arousing much interest and discussion among geologists and engineers throughout the oil industry.

### GULF COAST MARKET

Gulf Coast refinery markets continued quiet the past week. Reductions in prices on neutral oils of the previous week resulted in some increase in spot sales of the heavier viscosity oils but movements on the whole were slow. Virtually all business is in small tank car lots orders. Prices, however, seemed steady at the new lower levels. There was no change in fuel or gas oils, whose prices continued strong due more to the few sources of supply rather than to demand. Few sales were reported.

## Well in Clarke Zone At Santa Fe Springs Flows 3,000 Barrels

LOS ANGELES, Calif., Apr. 16.—The Rhode Petroleum Co.'s No. 2 in the extreme southeastern part of Santa Fe Springs Field blew in under a natural flow doing 3,000 bbls. of relatively clean oil daily from Clarke zone at 7,400 feet, the water shutoff being effected at 7,323 feet. This well proves up the entire eastern end of the structure for big production and will result in the starting of several new wells as the property adjoins leases of the Associated, Union and Plymouth Petroleum. S. P. Unions' No. 10 Howard, located near the apex of the structure, blew in Sunday flowing 5,000 bbls. of clean oil daily during the course of a water test being made at 6,565 feet. This well is producing from the O'Connell zone which is just below the Buckbee producing sand and immediately overlies the recently discovered Clarke horizon.

## Late Fields

### OKLAHOMA

Simms Oil Co.'s No. 1 Lester in the SE NE NE, Section 19-6-4, the new well east of the town of Asher, produced 2,020 bbls. in the 24 hours ending at 7 o'clock Tuesday morning of this week.

The combined production of the greater Seminole and St. Louis areas for April 25 or the potential which will serve as the basis for the new figures on permitted production was 463,190 bbls. From this total the proration per cents for the various pools will be taken. Umpire Ray Collins said, that owing to the fact that the pools of Maud, Mission, and Carr City are now defined the per cent of allowed production will be the same in all pools, that is 75 per cent of the potential figure.

The production as of April 15 follows:

| | Bbls. |
|---|---|
| Little River | 91,394 |
| Carr City | 16,662 |
| Maud | 16,882 |
| Mission | 38,859 |
| Bowlegs | 44,976 |
| Earlsboro | 73,662 |
| Seminole City | 42,620 |
| Searight | 10,951 |
| | 336,006 |
| St. Louis | 127,194 |
| Grand total | 463,190 |

Independent Oil & Gas Co.'s No. 2 Carpenter, SE cor. NE NE, Section 27-7-6, in the south Little River Pool is a failure in the Gilcrease sand at 3,161-67 feet. The well had a small show of oil and filled up with water at once. The company is drilling the well to a deeper formation at 3,178 feet. The No. 1 Carpenter in the NE cor. NE, a quarter mile north of the above well on the same lease, was completed a few months ago for better than 2,000 bbls. a day and is still making 1,720 bbls.

Observance of the Sunday shutdown plan in the greater Seminole area by 13

(Continued on Page 160)

# Jack County Has 60-Bbl. an Hour Well

## Wichita Falls District Continues Most Active in Field Operations. Panhandle Has Unusual Number of Completions

By James H. Dameron
*Fort Worth Bureau, The Oil and Gas Journal*

FORT WORTH, Tex., Apr. 15.—The most interesting development in North Texas during the week was the completion of a 60-bbl. per hour well in the Wichita Falls district. Harper's No. 1 Mary Leffel, in the central part of the Isaac Hugson Survey, Abstract 256, in the Bryson area of Jack County, swabbed and flowed 60 bbls. per hour from the total depth of 3,100 feet. This is the biggest well yet completed in Jack County and while the other producers in the Bryson area have been comparatively smaller the wells are nevertheless expected to be long life producers.

This well was previously estimated to be good for 55 bbls. from sand at 2,968-74 feet. It was deepened with an increase in oil from 3,068-79 feet with a shale break from 3,079-82 feet and more oil sand at 3,082-98 feet. The last two feet of drilling was in shale. After the well had produced its first flush it settled down to 800 bbls. natural daily.

The Wichita Falls district continues to be the most active district in Texas from the standpoint of field operations. Several good wells were completed in the various pools of the district. Production showed only a slight increase with Cooke County making another small gain to reach a new high in daily average for the year.

### Panhandle Producers

Panhandle reported an unusual number of completions and most of the several oil wells were fair producers. Wheeler County added four new gas wells, the largest of which was a 50,000,000-foot producer. The best oil was in the old Pampa Pool when Wilcox-Pampa's No. 4 Coombs-Worley made 400 bbls. from 2,892 to 2,923 feet.

The several wells drilling in important areas in Gray County are drilling at uninteresting depths. The most closely watched spot at this time is around the Marland Production Co.'s wildcat strike between the Bowers Pool and the Lefors area. Moore County also is coming back into prominence with wells in the Armstrong Pool down to depths where they are to be tested.

Production of the Panhandle declined 4,655 bbls. when every county, except Carson, showed a loss in daily average. Most of the loss in Gray County was attributed to the decline of two new flush producers. Marland company's wildcat between Bowers and Lefors dropped from 1,164 bbls. daily to 937 bbls. daily. Oil Operators Trust's No. 3 in the Bowers Pool showed the largest drop when it declined from 7,275 bbls. to 5,541 bbls.

### WICHITA COMPLETIONS

**Week ending April 13**

**Archer County**

Lea & Daniels' No. 6 Williams was shot with 15 quarts at 558-70 feet and made 20 bbls. oil and 9 bbls. of water. Magnolia Petroleum Co.'s No. 1 Kunkel was dry and abandoned at 1,450 feet. Its No. 2 Kunkel was dry and abandoned at 1,260 feet. McLaughlin Brothers' No. 1 Parkey was dry and abandoned at 1,550 feet. Moran and Independent Oil & Gas Co.'s No. 1 Scott made 43 bbls. at 1,206-08 feet. Petroleum Production Co. and others' No. 1 Kunkel-B made 53 bbls. at 1,170-84½ feet. Shell Petroleum Corp.'s No. 3 Abercrombie & Taylor-C made 12 bbls. after having been shot with 10 quarts at 1,382-90 feet. Consolidated Oil Co.'s No. 1 Tarr was dry and abandoned at 1,607½ feet. F. N. Gahlke's No. 2 Wilson-B made 63 bbls. oil and 12 bbls. water at 1,564-76 feet. D. O. Johnson's No. 6 Wilson-A made 57 bbls. at 1,556-63½ feet. Kemrow Production Co.'s No. 3 Campbell was dry and abandoned at 793 feet. Payne and others' No. 1 Parrish-A made 60 bbls. at 1,583-91 feet. Reno Oil Co.'s No. 9 Wilmot was dry and abandoned at 2,290 feet. Shappell Oil Co.'s No. 45 Jackson was dry and abandoned at 1,808 feet. C. P. Sheldon's No. 1 Chilson was dry and abandoned at 1,820 feet. Jim Turner and others' No. 5 Lyles was dry and abandoned at 1,733 feet. United Production Co. and others' No. 1 Brown made 18 bbls. at 1,474-83 feet. Boller and M. V. Co.'s No. 2 Falls Co. fee made 6 bbls. after having been shot with 4 quarts at 1,171-79 feet. L. G. Bradstreet's No. 2 Owens was dry and abandoned at 752 feet. Bridwell Oil Co.'s No. 1 Hamilton made 21 bbls. at 1,119-24½ feet.

**Clay County**

L. L. Bain's No. 4 Culberson made 4 bbls. at 323-34 feet. R. T. Beltcher and others' No. 1 Evans made 60 bbls. at 1,770-91 feet.

**Cooke County**

Kewanee Oil & Gas Co.'s No. 11 Timmis-A made 325 bbls. at 1,159-1,200 feet. The Texas Company's No. 7 Dennis made 512 bbls. at 1,224-55 feet. Westheimer and others' No. 1 Cox was dry and abandoned at 1,758 feet.

**Grayson County**

Simpson-Fell & Smith's No. 1 Owens was dry and abandoned at 1,203 feet.

**Wichita County**

Bullington Lee and others' No. 10 Jennings was dry and abandoned at 1,643 feet. Harry Hines' No. 2 Burnett-A made 20 bbls. at 1,390-1,403 feet. T. F. Hunter's No. 1 Waggoner Brothers-C made 25 bbls. at 1,299-1,309 feet. Panhandle Refining Co.'s No. 1 Burnett-A made 69 bbls. at 1,395-1,409 feet. R. R. Robertson's No. 1 Waggoner Brothers made 55 bbls. at 1,728-31 feet. Staley & Wynne's No. 16 Kemp & Kempner was dry and abandoned at 840 feet. Stump & Co.'s No. 1 Boyd made 24 bbls. at 1,776-81 feet. Their No. 2 Boyd made 300 bbls. at 1,774-82 feet. Underwood Drilling Co.'s No. 1 Morgan was dry and abandoned at 2,062 feet.

**Wilbarger County**

Burton's No. 1 Waggoner-I made 156 bbls. at 1,865-78 feet. Continental Oil Co.'s No. 1 Waggoner was dry and abandoned at 2,480 feet. Cosden & Co.'s No. 1 Waggoner-D made 146 bbls. at 2,647-55 feet. Robertson Drilling Co.'s No. 1 Webb Waggoner made 165 bbls. at 1,977½-90 feet. The Texas Company's No. 3 Waggoner-D made 63 bbls. at 2,368-91 feet. The Texas Company's No. 17 Waggoner-E made 170 bbls. at 2,400-22 feet. Wilbarger Oil Co.'s No. 1 Waggoner-B made 12 bbls. at 1,860-1,992 feet.

**Young County**

Continental Oil Co.'s No. 6 Campbell-B made 98 bbls. at 905½-18 feet. Pennell and others' No. 4 Calvin made 25 bbls. at 553-60 feet. Riggs & Oliphant's No. 1 Langston was dry and abandoned at 646 feet. The Texas Company's No. 1 Petty was dry and abandoned at 854 feet.

### WILDCAT OPERATIONS IN TEXAS PANHANDLE

**Week Ended April 13**

**CARSON COUNTY**

| Company, well, farm, name, section and block— | Remarks— |
|---|---|
| Empire G. & F. Co.'s No. 1 Armstrong, 330 ft. from S line and 330 ft. from E line of NW SE, Sec. 31, T.T.R.R. Sur. | Spud. |
| Empire Gas & Fuel Co.'s No. 15 Burnett, C NW Sec. 4, Blk 5, I.&G.N.R.R. Sur. | Spudding. |
| Gulf Prod. Co.'s No. 1-E Cooper, 330 ft. S and W of NE cor SW, Sec. 5, Blk. 9, I.&G.N. Sur. | Drlg. 2,620 ft. |
| Gulf Prod. Co.'s No. 6 Noel, 330 ft. S and 1,320 ft. E of NW cor. SW, Sec. 198, Blk. 3, I.&G.N. | Drlg. 2,530 ft. |
| Marland Prod. Co.'s No. 1 Burnett-L, 440 ft. S and 1,320 ft. NW NE cor. Sec. 79, Blk. 4, I.&G.N. Sur. | Drlg. 1,410 ft. |
| McElroy Oil Co.'s No. 1 Lewis, 330 ft. S and E of NW cor. SW NE, Sec. 115, Blk. 4, I.&G.N.R.R. Sur. | Drlg. 1,410 ft. |
| Morris et als' No. 1 Barnard, NW cor. SW SE, Sec. 44. | S.D. 2,610 ft; 50,000,000 ft. 2,325-2,595 ft. |
| Spartan Oil Co.'s No. 1 S. Bednorz, NW cor. E½ NW, Sec. 202, Blk. 3, I.&G.N. Sur. | Drlg. 2,760 ft. |
| Skelly Oil Co.'s No. 13 Schafer, 330 ft. N and E of SW cor Sec. 68, Blk. 4, I.&G.N. Sur. | Location. |
| Skelly Oil Co.'s No. 14 Schafer, 330 ft. S and W of NE cor. Sec. 68, Blk. 4, I.&G.N.R.R. Sur. | Location. |
| The Texas Corp.'s No. 1 Quinn, 330 ft. from S line and 330 ft. from W line SE, Sec. 7, Blk. 9, I.&G.N.R.R. Sur. | Spudding. |
| Travis et als' No. 1 D. A. Harrel, C NE NE, Sec. 162, Blk. 7, I.&G.N. Sur. | Drlg. 3,375 ft. |
| Ware et als' No. 1 Ware, 990 ft. S and 400 ft. E NW cor. Sec. 18, Blk. 3, A.B.&M. Sur. | S.D. 4,413 ft. |

**CASTRO COUNTY**

| | |
|---|---|
| Colorado O. & R. Co.'s No. 1 M. Siemmons, SW cor. Sec. 73, Blk. M-17, B.S.&F. Sur. | Rig blown down. |
| Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE, Sec. 333, Blk. M-6, S.K.&K. Sur. | S.D. 510 ft. for csg. |

**CHILDRESS COUNTY**

| | |
|---|---|
| C. L. Sloane et al's No. 1 B. P. Smith, Sur. 49, F. P. Knott lands | S.D. 4,340 ft. |
| The Texas Co.'s No. 1 Smith, 100 ft. each way from NW cor. Sec. 174, Blk. H, W.&N.W. Sur. | Hole full sulphur wtr. 3,985 ft; drlg. 4,529 ft. |

**COCHRAN COUNTY**

| | |
|---|---|
| Marland Prod. Co.'s No. 1 Slaughter-A, 330 ft. from W and 430 ft. from S lines, League 130, Carson County School land | Drlg. 875 ft. |

**COTTLE COUNTY**

| | |
|---|---|
| Explin. Co.'s No. 1 Richards | Drlg. 3,530 ft. |
| Explin. Co.'s No. 4 Matador Land & Cattle Co., C Sec. 46, J. H. Stephens Sur. | S.D. 3,227 ft. |
| Sun Oil Co.'s No. 1 T. B. Yarborough, 485 ft. S and 2,460 ft. E NW cor. Sec. 551, Blk. H. W.&N.W. Sur. | Drlg. 3,740 ft. |

**DONLEY COUNTY**

| | |
|---|---|
| Beaudoin et als' No. 1 Ball, 1,075 ft. from N line and 985 ft. from E line, Sec. 22, Blk. E, D.&P.R.R. Sur. | Location. |
| Marine Oil Co.'s No. 1 Sawyer, C SW, Sec. 5, Blk. G, G.C.&S.F. Sur. | S.D. 650 ft. |

**GRAY COUNTY**

| | |
|---|---|
| Anderson et als' No. 1 Heitholt, C NE SW, Sec. 152, Blk. 3, I.&G.N. Sur. | S.D. 1,240 ft. |
| B. S. Arnold's No. 1 J. E. Mingale, C E 160 ac., Sec. 212, Blk. B-2, H.&G.N. Sur. | U.R. 8-in. csg. 2,310 ft. |
| Barnsdall Oil Corp.'s No. 1 M. B. Davis, NW cor. W½ SE, Sec. 9, Blk. 1, A.C.H.&B. Sur. | Drlg. 2,730 ft; shot 105 qt. 2,662-97 ft; made 24 bbls. oil 24 hrs. |

(Continued on Page 72)

**ESTIMATED DAILY AVERAGE PRODUCTION NORTH TEXAS**
**Week ending April 13**

| | |
|---|---|
| Panhandle District— | |
| Carson County | 6,325 |
| Gray County | 28,140 |
| Hutchinson County | 24,955 |
| Moore County | 1,655 |
| Potter County | 10 |
| Wheeler County | 640 |
| Total this week | 61,725 |
| Total last week | 66,380 |
| Decrease | 4,655 |
| Wichita Falls District— | |
| Archer County | 16,654 |
| Baylor County | 80 |
| Clay County | 425 |
| Cooke County | 5,824 |
| Jack County | 1,624 |
| Montague County | 6,991 |
| Throckmorton County | 642 |
| Wilbarger County | 26,643 |
| Young County | 6,706 |
| Wichita County | 26,902 |
| Total this week | 92,491 |
| Total last week | 92,401 |
| Increase | 90 |
| Ranger District— | |
| Brown County | 8,393 |
| Callahan County | 4,012 |
| Coleman County | 3,602 |
| Comanche County | 1,182 |
| Palo Pinto County | 414 |
| Ranger | 5,294 |
| Shackelford County | 13,310 |
| Stephens County | 6,990 |
| Total this week | 43,197 |
| Total last week | 43,844 |
| Decrease | 647 |
| Grand total this week | 197,413 |
| Grand total last week | 202,625 |
| Decrease | 5,212 |

**Montague County**

The Texas Company's No. 2 Salmon-C made 12 bbls. at 997-1,010 feet.

### PANHANDLE COMPLETIONS

**Week ending April 13**

**Carson County**

Delmar Oil Co.'s No. 3 Noel, located 330 feet from east line and 990 feet from north line, W half SE, Section 198, Block 3, made 305 bbls. at the granite wash encountered at 3,224-30 feet. Skelly Oil Co.'s No. 1 Hedrick, located 660 feet from north line and 660 feet from west line, Section 239, Block B-2, H.&G.N. R.R. Survey, made 20,000,000 feet of gas at 2,520-2,700 feet.

**Gray County**

Danciger and others' No. 1 Shaw, located 1,000 feet north and 330 feet west of SE cor. SW, Section 5, Block 1, A.C. H.&B. Survey, made 300 bbls. at 2,662-78 feet. Parton & Holt's No. 1 Gethings was drilled to a total depth of 3,170 feet, plugged back to 2,600 feet and made 5,000,000 feet of gas at 2,515-18 and 2,575-85 feet. The Texas Company's No. 1 Key made 155 bbls. at 2,652-57 feet and 2,744-46 feet. Shell Petroleum Corp.'s No. 2 McConnell, 330 feet south and east of NW cor. E half SW, Section 174, Block 3, H&G.N.R.R. Survey made 85 bbls. at 3,251-61 feet and 3,284-85 feet. Southern Petroleum Exploration Co.'s No. 3 McConnell made 305 bbls. at 3,240-73 feet. The Texas Company's No. 6 Davis made 82 bbls. at 3,076-80 feet and 3,140-45 feet and drilled to a total depth of 3,200 feet. Wilcox-Pampa Oil Co.'s No. 4 Combs-Worley, located 330 feet north and east of SW cor. SE SW, Section 61, Block 3, H.&G.N. Survey made 400 bbls. at 2,892-2,923 feet.

**Wheeler County**

Angus and others' No. 2 Morgan, located C E half NW NE, Section 93, Block 17, H.&G.N. Survey, made 8,250,000 feet of gas at 1,700-1,930 feet. Edwards and others' No. 1 Griswold made 50,000,000 feet of gas at 1,800-90 feet. The Texas Company's No. 1 Gordon, located 330 feet north and 405 feet west

(Continued on Page 154)

# Important Sand Pool in Ward County

## Ward County Well Makes 435 Bbls. of 39 Gravity Oil in Six and a Half Hours. Possible New Pool East of Pecos Valley Pool

By James H. Dameron
*Fort Worth Bureau, The Oil and Gas Journal*

FORT WORTH, Tex., Apr. 15.—Four West Texas wildcat areas have been the center of interest to Permian Basin operators for the past week and at the same time daily average production of that territory fell off 22,000 bbls. to 354,000 bbls. daily as a result of a big cut in Hendricks Field allowed production. Semimonthly proration gauges for Hendricks show the Winkler County flush area to have lost 63,348 bbls. in potential production since the first of the month.

Gulf Production Co.'s discovery on the O'Brien ranch in Ward County is probably the most significant development at this time. No. 4 O'Brien is in Section 19, Block F, and about 1½ miles northeast of Wickett. The well is bottomed at 2,631 feet and is to be completed at that depth. Sunday the well made 435 bbls. in six and one-half hours.

This well is producing 39 gravity oil and the gasoline content of the oil is remarkably high for West Texas gas. It is producing from a sand formation and as soon as the sand quits running into the hole tubing and a liner will be set and the well completed. Gulf Pipe Line Co. is building a 4-inch line from the lease to connect with the company's main line system at Monahans. The line will be 4½ miles long and the oil is to be mixed with Hendricks production for shipment to the coast.

The discovery is generally regarded as opening an important sand pool in West Texas. Some geologists are inclined to believe the structure in northern Ward County may be much lower than the Hendricks structure and that a great deal more sand possibly was deposited on it than on Hendricks. In the event this theory is correct then a wide area of sand production may be found. Heretofore only small producers have been completed in the sand horizon wells on the east side.

Although No. 4 O'Brien is making high gravity crude free of sulphur it is not likely that an animated drilling campaign will be started in the area for some time. Gulf company and Magnolia Petroleum Co. control the close in acreage on three sides and the acreage open to the southwest is owned by the University of Texas and the land is tangled in litigation.

### Disappointment in Reeves County

On the west in Reeves County, R. R. Penn and Amerada Petroleum Corp. and others' No. 1 Bowles, NE cor., Section 36, Block 50, T-8, T. & P. Survey, proved to be a salty disappointment after showing for an excellent producer last week.

After 3,600 feet of 6⅝-inch casing had been lowered the bailer was run for the first time since the fluid filled the hole a week ago from a total depth of 5,177 feet. Only 4½ bailers of oil was found on a column of salt water containing some sulphur. The 6-inch casing was pulled and the 8¼-inch pipe will probably be lowered to shut off the salt water believed to be coming from 5,175-77 feet. In all probability the hole will be drilled down to the Delaware which is expected to be found within the next 100 feet of drilling.

### New Pool East of Pecos?

One of the most interesting wildcat operations at this time is the well being put down by Perren and associates about a mile east of the Pecos Valley Pool. The latter pool was discovered last November in Section 22, Block 10, and at a total depth of 1,628 feet it made 185 bbls. of 37 gravity oil on the pump.

Perren and others' No. 1 Eaton, Section 27, Block 3, H.&T.C. Survey, is making an estimated flow of 20,000,000 feet of gas from 1,480-1,502 feet. When the big gas was encountered at the bottom of the hole the tools were blown up in the hole 80 feet.

This well had its first gas at 1,480-90 feet and was estimated good for 3,000,000 feet daily at that depth. When deepened 4 feet the gas flow increased to 5,000,000 feet and Sunday the well's gas production skyrocketed with further deepening. Many are fearing the well may be the forerunner of another Yates Pool. Surface elevation of the Perren well is 2,497 feet compared to an elevation of 2,501 feet for the Pecos Valley Pool discovery well.

### Crockett County Producer

Moncrief and W. W. Donnelly and associates' No. 1 J. S. Todd, NE cor., Section 35, Block WX, G.C.&S.F. Survey, central Crockett County, was showing for a producer early this week. At 1,337 feet the well encountered its first gas and at 1,365 feet the first oil was found. The well was drilled to a total depth of 1,372 feet and 400 feet of oil rose in the hole.

The bailer was run and during the two-hour test the well made 24 bbls. The oil could not be lowered below 390 feet but only 20 feet more of oil rose in the hole in 45 minutes. The well is making between 500,000 feet and 1,000,000 feet of gas that has a slightly sulphur odor to it. The producing formation is described as brown sandy lime and the owners believe the well went out of that formation at the bottom as the cutting showed a lighter colored lime. No water is showing with the oil and the test has been shut down overnight. Several tests in this section of the county have had shows but failed to develop into commercial producers. This well, however, is making the best showing.

Mitchell County's shallow gas area is proving erratic. Ellis and Atlantic Oil Producing Co.'s No. 1 Elwood, Section 30, Block 13, S.P.R.R. Survey, made only 250,000 feet of gas at 632-47 feet. This well is south and east of the Simms Oil Co.'s shale gas well. No. 1 Elwood had a small show of dead oil at 535-45 feet which was cased off.

### Sulphur Water in Shipley

Sulphur water has made its appearance in the Shipley Pool in Ward County. Atlantic Oil Producing Co. and Delmar Oil Co.'s No. 1 Hayzlett, Section 17, Block 5, an offset to the discovery well, was deepened from 2,494 feet to 2,504 feet and a little sulphur water showed up in the last two feet of drilling. Deepening failed to increase the oil and the well is averaging about 58 bbls. daily. Top of the pay in this well is 2,478 feet and the small showing of sulphur water in the bottom of the hole is to be plugged off.

### Potential Drops in Hendricks

The most interesting development in the Hendricks Pool was the big drop in potential production. The new potential of the pool is 2,212,008 bbls. from 568 wells on 256 units. This indicates a drop of 63,348 bbls. within the past 15 days. During that time only two new wells were added to the pool and only 58 wells were actually tested. The remainder were penalized a fraction of the former potential because they were not tested.

According to Reed Alsobrook's figures of production by companies in Winkler County for the month of March 5,166,760 bbls. were produced. Southern Crude Oil Purchasing Co. was by far the largest producer with a total production of 1,421,302 bbls. Pure Oil Co. and Gulf Production Co. were the next highest with 511,584 bbls. and 588,290 bbls., respectively.

Winkler County was solely responsible for the 24,000-bbl. drop in daily average production of West Texas for the week ending April 13. This was due to the fact that the 25,000-bbl. cut in allowed runs of the county are for the first time reflected in the daily average production estimate. The reduction in runs went into effect April 1.

### Crude Oil Movements

With the sharp drop in tank car shipments for the week ending April 3 runs to West Texas steel storage increased to 17,905 bbls. This increase came in the face of a 4,000-bbl. loss in daily production and a 4,000-bbl. increase in runs to West Texas refineries. Another main line outlet was added to the list of pipe line carriers when the Shell Pipe Line Corp.'s 10-inch line to Houston started out running approximately 7,800 bbls. daily. The following is a table of crude oil movements in West Texas and a comparative summary:

**PIPE LINE RUNS**
**March 27 to April 3 (inclusive)**
**Runs Through Trunk Lines**

| | Last period |
|---|---|
| Atlantic P. L., to Port Arthur, Tex. | 36,000 |
| Gulf Prod., to coast via Ranger, Tex. | 24,053 |
| Humble P. L., via Comyn, Tex. | 41,682 |
| Humble P. L., via Ingleside, Tex. | 51,545 |
| Illinois P. L., via Del Rio, Tex. | 44,000 |
| Magnolia P. L., via De Leon, Tex. | 28,974 |
| Pasotex P. L., to El Paso, Tex. | 11,051 |
| Shell P. L., to Healdton, Okla. | 41,270 |
| Shell P. L., to Houston, Tex. | 7,804 |
| Total | 286,381 |

**Tank Car Shipments**

| | |
|---|---|
| Orient, McCamey, Tex. | 149 |
| The Texas Co., Crossett, Tex. | 441 |
| American Pet. Co., Pyote, Tex. | 4,601 |
| Cosden & Co., Big Spring, Tex. | 3,323 |
| Skelly Oil Co., Pecos, Tex. | 2,101 |
| Burford Oil Co., Pecos, Tex. | 3,207 |
| Total | 13,817 |

**Runs to West Texas Refineries**

| | |
|---|---|
| Amarillo Prod. Co., Pyote, Tex. | 93 |
| Blue Bonnett Ref., Wickett, Tex. | 1,623 |
| Burford Ref. Co., Pecos, Tex. | 8,097 |
| Col-Tex Ref. Co., Colorado, Tex. | 6,400 |
| Cosden Ref. Co., Big Spring, Tex. | 9,000 |
| Great Western Ref., Big Spring, Tex. | 3,600 |
| Humble O. & R. Co., McCamey, Tex. | 8,611 |
| Midland Ref. Co., Midland, Tex. | 1,943 |
| Tankawa Ref. Co., Pyote, Tex. | 3,741 |
| Valley Ref. Co., Pyote, Tex. | 3,701 |
| Big Spring Ref. Co., Big Spring, Tex. | 2,310 |
| Total | 49,129 |

**Summary**

| | Previous week | Last period |
|---|---|---|
| Pipe line runs through trunk lines | 286,252 | 286,381 |
| Tank car shipments | 31,512 | 13,817 |
| Runs to West Texas refineries | 45,423 | 49,129 |
| Total daily disposition | 363,187 | 349,327 |
| Daily average production | 371,478 | 367,232 |
| Daily average to storage | 8,291 | 17,905 |

### New Peak for Deepest Well

Texon Oil & Land Co.'s 8,525-foot producer in the Big Lake Pool in Reagan County reached a new production peak during the week when the well gauged 2,315 bbls. of 56 gravity oil for the 24 hours ending April 10. The gas production also has increased to above 22,000,

(Continued on Page 156)

## WILDCAT OPERATIONS IN WEST TEXAS

**Week Ended April 13**

| Company, farm and location— | Remarks— |
|---|---|
| **ANDREWS COUNTY** | |
| Deep Rock Oil Co.'s No. 1 Hostetler, 2,310 ft. N and W of SE cor. Sec. 20, Blk. A-46 | Hole full water 1,390 ft.; underreaming 10-in. casing; top salt 1,890 ft.; set 8⅛-in. casing 2,790 ft.; shut down 4,100 ft. |
| Mid-Continent Oil & Gas Co.'s No. 1 Fisher, 1,320 ft. N and 200 ft. E of SW cor. Sec. 5, Blk. A-36 | Drlg. 980 ft. |
| **BORDEN COUNTY** | |
| Gibson & Johnson's No. 1 Higginbotham, middle of S line of Sec. 8, Blk. 31, Twp. 3n, T.&P.R.R. Sur. | Drlg. 1,160 ft. |
| C. E. Hyde et al's No. 1 D. H. Beal, C NE Sec. 14, Blk. 31, Twp. 3n, T.&P.R.R. Sur. | Drlg. 2,145 ft. |
| Teas & Wheeler's No. 1 Long, 1,320 ft. N and E of Sec. 27, Blk. 30, T.&P. Sur. | Location. |
| **BREWSTER COUNTY** | |
| E. W. Bateman et al's No. 1 Nevill, 2,000 ft. from S line and 1,000 ft. from W line of Sec. 64, Blk. 13, G.H.& S.A.R.R. Sur. | Cleaning out 1,955 ft. |
| Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor. Sec. 45, Blk. G-15, G.C.&S.F. | Drlg. 1,435 ft. |
| Cowden & Bowser's No. 1-A Jackson & Harmon, Sec. 1, Blk. 331, T.C.R.R. Sur. | Set 8-in. 1,530 ft.; shut down 2,060 ft. |
| Forrest Oil Co.'s No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur. | Shut down 1,500 ft. |
| J. M. Hickey's No. 1 Jackson & Harmon, NE cor. Sec. 182, Blk. 9, G.H.&S.A. Sur. | Shut down 1,150 ft. |
| Johnson & Weekly's No. 1 Jackson & Harmon, C Sec. 104, Blk. 10, G.H.&S.A. Sur. | Drlg. 950 ft. |
| Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 mi. S of Alpine | Shut down 1,740 ft. |
| Williams and others' No. 1 Poncey, 459 ft. S and 1,062 ft. E Sec. 26, Blk. 214, T.&St.L.R.R. Co. | Shut down 515 ft. |
| **COKE COUNTY** | |
| Cates & Dennis' No. 1 Mimms, 2,500 ft. S and 330 ft. E of NW cor. Sec. 47, Blk. 4, T.&P. Sur. | Underreaming 1,600 ft. |
| Cates & Dennis' No. 2 Mimms, 2,340 ft. N and W SE cor. Sec. 8, Blk. W, T.&P. Sur. | Spudded and shut down. |
| Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur., elev. 2,750 ft. | Shut down 2,860 ft. |
| Mid-Kansas Oil Co.'s No. 1 W. E. Lackey, 330 ft. N and E of SW cor. Sec. 272, Blk. 1-A, H.&T.C. | Drlg. 3,620 ft. |
| Ray E. McCamey et al's No. 1 McCutchen, 2,300 ft. S and 785 ft. W of NE cor. of T. J. Hines Sur. No. 4 | Drlg. 435 ft. |
| **CONCHO COUNTY** | |
| Duffey & Silk's No. 1 Lovelace and Lockett, 1,050 ft. N and 640 ft. W of SE cor. Sec. 66, Blk. 70, H.&T.C. Sur. | Drlg. 1,707 ft. |
| Exploration Co.'s No. 2 Hartgrove, 900 ft. S and 985 ft. E of NW cor. Johann Scheuch Sur. No. 240 | Rig. |
| Lloyd Jones Co.'s No. 1 Jones, 420 ft. S and 15 ft. E of NW cor. John G. Reh Sur. No. 1,878 | Drlg. 1,035 ft. |
| **CROCKETT COUNTY** | |
| Eppenaur et al's No. 2 Noelke, 500 ft. N and 1,250 ft. E of SE cor. Sec. 64, Blk. 1, I.&G.N.R.R. Sur. | Drlg. 395 ft. |
| Lewis & Daniels' No. 1 Pecos River Bed, 19 yards S and 37 degrees E of NW cor. Sec. 33, Blk. 1, I.&G.N. Sur. | Cleaning out 620 ft. |
| W. W. Donnelly & Young's No. 1 Shannon, SW SW SE Sec. 42, Blk. BB, T.C.R.A. Sur. | Drlg. 680 ft. |

(Continued on Page 65)

Some refiners are storing their assets in the form of fuel oil

Other refiners, using the Dubbs Cracking Process, are converting their assets into cash

The difference is simple:

The users of the Dubbs Process convert fuel oil into large yields of salable gasoline Other refiners, lacking the Dubbs Process, must store their assets in tanks, and in doing this they are storing up possible future losses

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

# Simms Wildcat Points to a New Pool

## Well West and South of St. Louis and Pearson Pools Flowing 80 Bbls. an Hour After Being Drilled to Depth of 3,698 Feet

By W. A. Spinney
*Staff Correspondent, Oklahoma Fields*

A major pool is believed to have been opened in the greater Seminole district by the Simms Oil Co.'s No. 1 Lester, SE cor. NE NE, Section 19-6-4e, a wildcat test in the southern part of Pottawatomie County, just east of the town of Asher and 5 miles south of production in the Pearson Switch Pool.

The new well is slightly west and south of the St. Louis and Pearson Pools in Townships 7-5 and 7-4, although comparing its position with other pools will have little bearing on its final status.

The Viola lime was topped at 3,650 feet and is running rather high as the well was drilled on a good surface structure. When drilled to 3,682½ feet the well immediately filled up with oil and in a few hours started to flow. The first hour's production was 172 bbls. On Sunday afternoon the well was drilled to 3,698 feet and it was reported to be flowing steadily at the rate of 80 bbls. an hour. The well produced 1,454 bbls. Sunday night after being deepened. It was necessary to shut the well in as the owners had only one 500-bbl. tank on the lease, awaiting the erection of stock tanks and a pipe line connection.

The well is approximately a mile northwest of a dry hole drilled several years ago by Croxton & Bucklin in the NW NE SE, Section 20-6-4. The dry hole, however, had a good showing of oil in the Hunton lime at 3,520-30 feet, which was passed up to test the deeper horizons and was abandoned in what is supposed to be the Wilcox sand at 3,782-3,800 feet.

The Simms well missed the Hunton altogether. During the 10-day wait for the cement to set after landing the 8-inch casing, the well was rigged up with standard tools and was drilled into the Viola formation.

A great many wells in the area have had good showings of oil in the Viola only to find the deeper formations with nothing in them. The Viola lime has not been a very productive horizon and is considered by geologists more as a marker, to be used in correlating well logs, than anything else. In some cases where the Viola has carried water oil has been found in deeper formations. The final result of the well is a matter of speculation, as the finding of oil or water in the Viola is not a criterion of what the deeper sands will produce.

Another interesting well to the south and west is the Tidal Oil Co., Gardner Petroleum Co. and others' No. 1 Davis, C SE SE, Section 31-5-2e, southeastern part of McClain County. The well is being drilled on a good looking geological structure that has been worked from the few wells that have been drilled nearby.

The Dixie Oil Co. a few years ago drilled a well in the SE NW, Section 15-4-1e, which is the extreme northern part of Garvin County, and 3 miles southeast of the Tidal and others' well which lines up with the other pools of the greater Seminole to the north, and it is thought by men who are interested in the area that any new production from the Wilcox sand will be in a district that will lay to the south and west of the great pools that have been discovered in Seminole and Pottawatomie Counties.

The Dixie well topped the Wilcox sand at 4,555 feet and was drilled to 5,458 feet which is 900 feet in the Wilcox horizon. It is thought that the well was too low on the structure to produce and from the data that was kept the Tidal and associates decided to test the area to the north and east.

The Tidal and others' well is drilling at 3,852 feet and should be in the Viola lime in a few days. If they should reach the horizon at or above 4,000 feet the owners feel that it has a good chance of being a producer in the Viola or Wilcox sands.

### May Redrill Seminole Pools

When the Sinclair Oil & Gas Co. drilled to 4,425 feet in the NW cor. Section 12-7-6, Little River Pool, Seminole County, and got a dry hole and thereupon plugged back to the Cromwell sand at 3,200-02 feet and got a 300-bbl. initial producer, (with about 60 bbls. of water) it started something which may have a very important bearing on the future of the Seminole Field. The Sinclair well was too far east to get the Wilcox pay and likewise T. B. Slick's No. 1, in the C NE SW, Section 26-7-6, which was a hole full of water at 4,474 feet. Slick plugged back to sand at 3,325-31 feet and got a 2,000-bbl. well. The Gypsy Oil Co.'s No. 8 Cotcha, C SW SW SW, Section 23-7-6, more recently found an 1,800-bbl. initial production at 3,135-74 feet and The Texas Company and Independent Oil & Gas Co. in the C SE SE SE, Section 22-7-6, got a producer which made 2,000 bbls. in 20 hours and later was flowing 200 bbls. an hour from sand at 3,128-51 feet. The Independent Oil & Gas Co.'s No. 1, C NE NE NE, Section 27, made 1,800 bbls. from sand at 3,105-19 feet. These wells are all producing from the Gilcrease sand. They were drilled as Cromwell or Gilcrease tests.

According to the opinion of men familiar with the area there is no reason to believe that the same pay does not underlie most if not all of the Little River Pool, and gives rise to the belief that all of the various Seminole Pools may have production in the Cromwell or Gilcrease horizon, which were drilled through and passed up in the effort of the operators to get down to the big pay in the Wilcox series. If this opinion maintains it may mean the retesting of the whole area. Few if any wells in any of the Seminole pools had pipe set on top of the Cromwell sand and the fact that the sand carries a large volume of gas under heavy pressure makes it dangerous to plug back for fear of the gas breaking through and causing heavy damage in its uncontrollable state. The Carter Oil Co. had a very expensive experience with plugging back in the Little River Pool. Its Wilcox sand well, C NW NE NW, Section 24-7-6, was plugged back to the Cromwell series and a tremendous flow of gas was opened up. The well could not be controlled until after it had cratered and caused much damage. It is said to have cost the Carter Oil Co. about $250,000 before the well was placeod under control. The Gypsy Oil Co. also had a costly experience trying to plug back a well in the same pool, so that all things considered it will probably mean that twin wells will be the rule in the development of the Cromwell sand series in the field. The so-called Earlsboro sand, which was developed before the Wilcox sand was discovered to be productive in Township 9-5, may be in the Cromwell series. It is found in the 3,600-foot horizon, while in Little River the Cromwell series lies at 3,100 to 3,300 feet, but the Wilcox sand also is deeper in the Earlsboro Pool than in the Seminole pools east of it.

### Oklahoma City

The Oklahoma City area is still holding a major interest in what the future development of the pool will be. The Indian Territory Illuminating Oil Co.'s No. 1 fee, C SE SE, Section 24-11-3w, which is the discovery well in the district, is still declining in oil production and gaining in water output. During the past week another well tested the upper or 5,000-foot horizon and found water.

Wirt Franklin Petroleum Co.'s No. 1 Lowery, NW cor. SW NW, Section 12-11-3w, is making 30,000,000 feet of gas from 3,997-4,010 feet. The crew was running casing at 3,995 feet to make a better check on the gas.

Indian Territory Illuminating Oil Co.'s No. 1 Fortson, SE cor. SE NE, Section 24-11-3w, has been shut in as a gas producer. It gauged 27,000,000 feet of gas. The sand was barely touched at 3,953 feet. The well was shut in after a test was taken of the gasoline possibilities. The gas has been found to test two-tenths of 1 gallon of gasoline to the 1,000 feet of gas.

Ramsey Petroleum Co. has made a drilling deal with the Mid-Kansas Oil & Gas Co., whereby it will take over 10,000 acres of leases 12 miles east of Oklahoma City and drill a well to the Wilcox sand horizon for a half interest. Ramsey Petroleum Co. retains a half interest in all production found on the block. Material for the test is being moved in on the location, NE cor. NE NW SE, Section 19-12-1w. Drilling will be started by May 1.

### In the Beebe District

The Beebe district is breaking into print again with a new well that extends the production a mile to the northwest. The American Refining Co.'s No. 1 M. Ward, NW NE SW, Section 19-5-5e, Pontotoc County, topped the Viola lime at 2,303 feet, pay was found in the lime at 2,375-2,405 feet and the well has made two flows of 40 bbls. in 12 hours. A later report will be watched with interest.

The Magnolia Petroleum Co.'s No. 1 Latimer, SE SW NW, Section 17-7-4e, north of Pearson Switch Pool, Pottawatomie County, which was drilled in a few weeks ago and was reported to be producing from the Simpson lime is being put on the air lift and is reported making 1,303 bbls.

### Sunday Shut Down Results

The following statement of production over the week end of April 7, shows the results of the latest Sunday shut down in the Seminole area:

| Company— | Apr. 6 bbls. | Apr. 7 bbls. |
|---|---|---|
| Producers & Refiners Corp. | 2,378 | Non |
| Barnsdall Oil Co. | 15,078 | 5,99 |
| Prairie Oil & Gas Co. | 48,001 | 20,94 |
| Atlantic Oil Prod. Co. | 1,275 | 20 |
| Mid-Continent Pet. Co. | 9,212 | 6,91 |
| Shell Pet. Corp. | 5,949 | 62 |
| Tidal Oil Co. | 7,320 | 4,38 |
| Shaffer Oil & Ref. Co. | 1,220 | 19 |
| Magnolia Pet. Co. | 12,974 | 8,50 |
| Turman Oil Co. | 1,803 | 95 |
| Continental Oil Co. | 2,820 | 1,18 |
| Total | 109,261 | 50,01 |

### Seminole Pipe Line Runs

The average pipe line runs for the past week are in line with the production over the same period in the Seminole area. Following are the daily average runs for the week ending April 13:

| | Bbls. |
|---|---|
| Barnsdall | 8,94 |
| Champlin | 5,24 |
| Continental | 61 |
| Consolidated | 29 |
| Cosden | 11,42 |
| Empire | 8,15 |
| Gulf | 24,11 |
| Independent | 44 |
| Magnolia | 22,34 |
| Oklahoma | 40,25 |
| Prairie | 56,87 |
| Producers & Refiners | 4 |
| Pure | 7,71 |
| Shaffer | 3,81 |
| Shell | 9,54 |
| Sinclair | 27,29 |
| Texas | 15,98 |
| Tidal | 15,94 |
| White Oak | 2,90 |
| Total | 261,91 |

Add to the above total 9,030 bbls. which is being shipped out in tank cars, making a grand total of 270,943 bbls. daily.

J. S. Cosden and the Iron Mountain Oil Co.'s new well, No. 1 Anderson, NE NW SW, Section 13-9-5, on the east side of the Earlsboro Pool which made better than 5,090 bbls. in 24 hours after a shot a week ago, was producing 4,813 bbls. of oil and some water at the close of the week.

Healdton Oil & Gas Co.'s No. 1 Gragg, SW SW, Section 29-18-4w, Crescent-Lovell area in Logan County, the deepest producing well in the State, is drilling ahead in the Hunton lime formation at 6,692 feet, and the production is still around 130 bbls. daily. The Hunton was topped at 6,636 feet.

### Carter County

Schermerhorn and others' No. 2 Jolliff, NW cor. NE NE NW, Section 24-5s-1, is dry and abandoned at 4,536 feet.

### Cherokee County

Shell Petroleum Corp.'s No. 1 Willay, NW cor. NE, Section 25-16-19, is drilling at 70 feet.

### Creek County

Silurian Oil Co. and Houston Oil Co.'s No. 2 Anthis, SE cor. SW SE, Section 6-19-7, is drilling at 250 feet. J. A. Abbott and others made location for No.

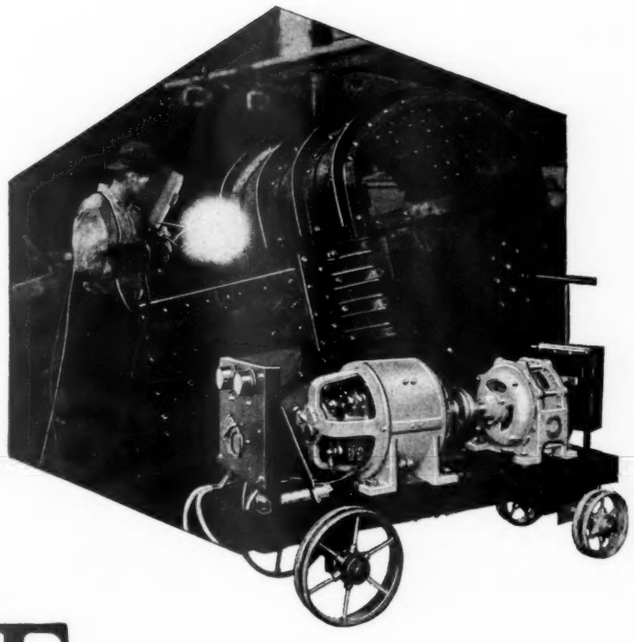
(Continued on Page 113)

## WILDCAT OPERATIONS IN OKLAHOMA

### NORTHERN OKLAHOMA

| Company, farm and location— | Remarks: |
|---|---|
| **ALFALFA COUNTY** | |
| Smith Bros.' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w | Rigging up cable tools. |
| Washoma Oil Co.'s No. 1 Acre, SW cor. NE, Sec. 14-24-11w | Rig. |
| **BECKHAM COUNTY** | |
| C. & H. Petroleum Co.'s No. 1 Barnes, SW cor. NW NE Sec. 32-9-22w | Shut down 3,460 ft. |
| L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w | Shut down 725 ft. |
| Producers Exploration Co.'s No. 1 Seidell, SE cor. SW SW Sec. 17-9-22w | Shut down 2,402 ft. |
| Trees Oil Co.'s No. 1 Rodgers, SW cor. SW Sec. 30-8-25w | Shut down 430 ft. |
| Carson and others' No. 1 Danby, SW cor. SE NE Sec. 20-8-22w | Drlg. 1,300 ft. |
| Pferffel and others' No. 1-A Carter, NE cor. NE Sec. 35-9-22w | Shut down 1,500 ft. |
| Day Oil Co.'s No. 1 Ault, NW cor. NW Sec. 33-8-21w | Shut down 1,515 ft. |
| Continental Oil Co.'s No. 1 Proctor, SE NE NE, Sec. 5-8-8e | Rig. |
| **BLAINE COUNTY** | |
| Lowen and others' No. 1 Unknown, NW cor. SW NW Sec. 27-16-11w | Spudded and shut down; renewing leases. |
| Ragland and others' No. 1 Unknown, C NW SW Sec. 13-19-10w | Rig. |

(Continued on Page 109)



# They *tried* 4 *makes* of Welding Machines —then *Standardized* on WILSON

**IN the shop where the accompanying picture was taken A. C. Nielsen Company made an intensive study of welding operations in the repair of locomotives, railway cars, cranes, and other contractors' equipment.**

**Nielsen reports that, in searching for welding equipment that would meet their extremely varied and highly exacting needs, this shop experimented with four different makes of welding machines. And, although each of the first three machines gave satisfactory service in certain kinds of work, all three makes proved incapable of rapid arc adjustment as they were changed from job to job, and thus caused a considerable loss.**

**Then a Model S Wilson Welding Machine was purchased. Immediately it demonstrated quicker *adaptability*, closer *control*, greater *portability*, and far greater *strength* in welds than the machines previously used. Its superiority was also reflected in *lower power cost, lower total upkeep, and a tremendous saving in time.* As a result, the company *standardized* on *Wilson*, and today, all their welding is done *exclusively* with Wilson Machines.**

**Regardless of what your industry is, Wilson—with its long and varied experience, with its great accumulation of welding information—can assist you in solving your welding problems.**

WILSON WELDER & METALS CO. INC.
18 Wilson Building, Hoboken, N. J.

# WILSON

## WELDING MACHINES AND WELDING WIRE

In the repair shop referred to above Wilson "Color-tipt" Welding Wire has been used almost *exclusively* for the last five years. As a result of its long experience, this company points out that one of the outstanding advantages of

Wilson Wire is that the *right* grade (analysis) can be selected for the *particular metal* being welded. A sample of the *right* grade of Wilson Wire for the metal *you* are welding will be sent gladly upon request — no obligation.

# Gypsy Wildcat Opens Pool in Kansas

## No. 1 Williams, 300 Feet North of State Line, in Sumner County, Making 60 Bbls. an Hour Besides 5,000,000 Feet of Gas Daily

By W. A. Spinney
*Staff Correspondent, Kansas Fields*

A new Wilcox sand well has been found in the most southern part of Kansas only 300 feet north of the Oklahome state line in Sumner County. In the matter of field development the new well marks one of the most important discoveries that has been found in the State of Kansas for some time.

The well is owned by the Gypsy Oil Co. It is No. 1 Williams, NW cor. Section 16-35-3w, Sumner County. The top of the Wilcox sand was found at 4,768 feet the well was making 5,000,000 feet of gas and after drilling in 14 feet to a depth of 4,782 feet first hour's production was 60 bbls. It was thought best to pinch in the production and after this was done the well was later gauged and in eight hours produced 480 bbls.

The discovery has just as important a bearing on Oklahoma as it has on Kansas. The location is north of Township 29-5 in Grant County, Oklahoma, and close to the line which divides the States. While Grant County, Oklahoma, has been the scene of periodical drilling campaigns for years, the Deer Creek Pool on the east side of the county, and about 12 miles south of the state line, has been the most prolific oil discovery in the county. Some big gas wells have been developed there. The Gypsy well in Sumner County was started following the most recent lease play in Grant County in 1928 and whatever significance the well has in its relation to the production of Kansas is quite likely to be duplicated in its relation to northern Oklahoma developments.

### Makes Ellis Look Better

Another interesting well has been drilled in, in Ellis County, which joins Russell County on the west. The new well is in the south central part of Ellis, and is the second well to be completed by the Phillips Petroleum Co. on a large block of leases which they own, 4 miles wide and 6 miles long, with a total of over 7,000 acres in all.

The first well completed by the Phillips Petroleum Co. was No. 1 in the C NE Section 5-12-17w. The Oswald lime pay at 3,572-85 feet developed a production of 240 bbls. a day, which has been shut in for several months. The second well is about 3 miles south in the same block in the NW cor. of Section 20-12-17w, which has just topped the Oswald at 3,385 feet and filled up with 1,500 feet of oil. They are landing casing before drilling in.

### Showing in McPherson

McPherson County is also holding a lot of attention at this time as this county is in the trend directly north of Harvey and Sedgwick Counties. Ted Washabaugh and others' No. 1 Vashell in the NE of Section 9-21-3w has the chat at 2,981 feet and is underreaming 6-inch casing with a good showing of gas.

### New Production Record in Sedgwick

Sedgwick County registered a new high for all time on April 11 of 24,566 bbls. from 38 wells. The average daily production for the past week was 23,874 bbls., which is an increase of over 8,000 bbls. over the average of last week. There were a number of completions in the county during the past week. Montour Oil Co.'s No. 1 Lavender, CWL SE SW Section 6-26-1e, Valley Center Pool, had the top of the pay 3,391-93 feet and swabbed 370 bbls. in four hours. Plains Oils Co. and Elmer Corp.'s No. 1 in the NE SE SE Section 36-25-1w, which is on the south edge of the Valley Center Pool and offsets the dry hole recently completed by the Derby Oil Co., has the pay at 3,412-14 feet with 2,000 feet of oil in the hole. J. R. Robertson and others on the west side of the town of Valley Center has a failure and will abandon No. 1, SE SW NE Section 36-25-1w, total depth of 3,441 feet.

Phillips Petroleum Co. is drilling a wildcat test in Rush County. The well is located on what is considered a good surface structure. It has reached the Gorham pay sand and is showing 3,000,000 feet of gas. The well is No. 1 Legleeter, NE cor. NW SE Section 10-16-18w. The top of the sand is at 3,570 feet. A fishing job delayed completion.

Harold Petroleum Co. and others recently completed a well in the SE NE NE, Section 27-32-4w, Sumner County. It was deepened from 3,505 feet to 3,508 feet, and it continues to flow 300 bbls. daily. Several new tests are starting in the district. Marland Production Co. is rigging up for No. 2 Spence. The company's No. 1 is making 125 bbls. daily. Dickey & Shawver are getting material ready to drill No. 2, which is a south offset to the above producing well.

In Cowley County, Prairie Oil & Gas Co. and Slick in their No. 2 Youle, SE SE cor. Section 9-32-4e, due north of Winfield, have the top of the Siliceous lime at 3,242 feet with hole full of oil which they will shoot. The pay sand was found higher and should make a better well than their No. 3, which is making 900 bbls. daily.

Mid-West Exploration Co.'s No. 34 Karst, SW cor. SE SW, Section 11-16-15w, is dry and abandoned at 3,730 feet.

### Butler County

Empire Oil & Refining Co. and Phillips Petroleum Co.'s rig is up for No. 1-B Robinson, NW cor. NE, Section 29-25-4. Ed Schreck and others moved a machine in for No. 1 Teeter, SE cor. SW, Section 8-25-7. Empire Oil & Refining Co. is erecting the rig for No. 79 Koogler, NE cor. SW NW, Section 20-26-5. The rig is being built for No. 8 Koogler, NE cor. SE NW, Section 20-26-5. H. H. Noble and others made location for No. 1 Owen, NE cor. SE, Section 20-26-7. Empire Oil & Refining Co. is building the rig for No. 6-A Brandenberger, NW cor. NE NE, Section 22-27-5. The rig is also being built for No. 7 Cranston, SE cor. SW SE, Section 22-27-5.

### Barton County

Empire Oil & Refining Co.'s No. 76 Koogler, NW cor. SE NW, Section 20-26-5, made 225 bbls. from sand at 2,486-2,571 feet. No. 5-A Brandenberger, SW cor. SE NE, Section 22-27-5, was completed for 175 bbls. in sand at 2,714-66 feet. Allison & Fitzwilliams' No. 6 McGinnis, SE cor. NE NE, Section 9-27-6, made a 50-bbl. well in Viola lime 3,134-53 feet.

### Chase County

Smith & Polhamus' No. 1 Leedy, SW cor. NW, Section 36-22-9, is drilling at 1,500 feet.

### Chautauqua County

Petroleum Producers Corp. made location for No. 1 White, SE cor. NW, Section 5-32-10.

### Cowley County

Marland Oil Co. and Hiatt and others' No. 1 fee, SW cor. NE, Section 8-31-8, is a rig. Blankenship and Washoma Oil Co.'s No. 1 Hedrick, SE cor. SW NE, Section 16-32-4, is a rig under construction. J. A. Hull made location for No. 6 Bartlow, NW cor. SW NW, Section 19-32-5. Shawver and others staked location for No. 2 Beard, NW cor. SE SE, Section 17-34-3. Shawver and Marland Oil Co.'s No. 1 Stout, SE cor. NW, Section 10-31-3, is dry and abandoned at 3,131 feet.

### Dickinson County

Millmack Oil Co. made location for No. 1 Biehler, SW cor. NE, Section 28-16-4.

### Elk County

Barber and others moved a machine to the location for No. 1 Brown, NE cor. SW, Section 12-30-9. Waggoner & Spencer's No. 1 Stewart, NW cor. SW, Section 19-28-12, is dry and abandoned at 2,010 feet. McCulloch Oil Co.'s No. 1 Dunlap, C NW NE, Section 13-29-9, has been abandoned at 2,268 feet.

### Greenwood County

D. M. Rhodes made location for No. 1 Norton, NW cor. NE, Section 22-22-12. Independent Oil & Gas Co. is building the rig for No. 3 Race, NE cor. NW SE, Section 19-23-10. Parkins and others made location for No. 1 Carson, SE cor. NE, Section 5-24-11.

Independent Oil & Gas Co.'s No. 10 Sheperd, SW cor. SE, Section 2-22-10, made 225 bbls. from sand at 2,084-2,134 feet. Garden & Stats' No. 1 Klasser, NE cor. SE, Section 5-22-11, is a dry hole at 2,149 feet. Shell Petroleum Corp. and Swartz' No. 4 Sheets, SE cor. NW NE, Section 23-22-11, made 80 bbls. from sand at 1,863-88 feet. Simmons & Rhodes' No. 4 Luthi, NW cor. SE SW, Section 29-22-13, was completed for 30 bbls. in sand at 1,686-96 feet.

### Harvey County

Shell Petroleum Corp. is erecting the rig to deepen No. 1 Houry, NE cor. SW SE, Section 11-23-2w, a gas well. McPherson Oil & Gas Development Co.'s No. 1 Ruth, SW cor. NE NW, Section 14-23-2w, is rigging up.

### Marion County

Empire Oil & Refining Co. made location for No. 1 Schully "B," SE cor. Section 1-19-2. The rig is up for No. 1 Schully, SW cor. NE NE, Section 28-19-2.

### McPherson County

The Texas Company's No. 3 Chindberg, SE cor. NW, Section 32-18-2w, made 90 bbls. from chat at 2,960-3,010 feet.

### Osage County

Papoose Oil Co.'s No. 1 Evans, SW cor. NW NW, Section 34-18-14, is dry and abandoned at 1,781 feet.

### Reno County

Empire Oil & Refining Co. has the rig on the ground for No. 1 Henderson, SW cor. Section 35-25-4w.

### Riley County

Derby Oil Co., Skow Brothers and Ritchie's No. 1 Lundstrom, NE cor. Section 32-7-5, is a cellar.

### Rush County

Sinclair Oil & Gas Co. made location for No. 1 Senser, SE cor. NW NW, Section 8-18-17w.

### Saline County

Dixie Oil Co. made location for No. 1 Muir, SW cor. SE SW, Section 6-15-2w.

### Sedgwick County

Bu-Vi-Bar Petroleum Corp. and others' rig is up for No. 6 Bright "A," SE cor. NW, Section 6-26-1, Valley Center Pool. Also the rig is up for No. 6 T. Goodrich, NW cor. SE, Section 6-26-1. Location has been made for No. 1 Vallbrecht, NW cor. SW NE, Section 7-26-1. Burnett Oil & Gas Co.'s rig is up for No. 1 Davidson, NW cor. SW, Section 27-26-1. Shawnee Oil Co. is building the rig for No. 1 Newman, SE cor. SW NW, Section 5-26-2. Twist and others' rig is under construction for No. 1 Armstrong, NE cor. NW, Section 28-26-1.

Brandebury & Hinkle's No. 1 Whiting, NW cor. Section 31-25-1, is dry and abandoned at 2,650 feet. Derby Oil Co.'s No. 1 Ramsey, SW cor. NW SW, Section 31-25-1, has been abandoned at 3,423 feet. George L. Miller and others' No. 1 Caldwell, NW cor. SW, Section 31-25-1, is a dry hole at 3,457 feet. Sawyer & Dickey's No. 1 Kehl, SW cor. NW SW, Section 31-25-1, has been abandoned at 2,710 feet. The Prairie Oil & Gas Co. and others' No. 2 Smyser, SE cor. SW SE, Section 36-25-1w, was completed for 214 bbls. in sand at 3,391-3,400 feet.

Bu-Vi-Bar Petroleum Corp.'s No. 1 Bright "A," NW cor. Section 6-26-1, made 100 bbls. in sand at 3,375-85 feet. Jones and others' No. 1 Brown, NW cor. Section 6-26-1, is dry and abandoned at 3,630 feet. Mary Jane Oil Co.'s No. 2 Fitch, SW cor. NE SE SW, Section 6-26-1, flowed 1,225 bbls. from sand at 3,387-92 feet. Phillips Petroleum Co. and the Prairie Oil & Gas Co.'s No. 1 Pfeffer, SW cor. NE, Section 6-26-1, was completed for 220 bbls. in sand at 3,386-90 feet. Bu-Vi-Bar Petroleum Corp. and others' No. 1 Byers, NE cor. NW SW NE, Section 7-26-1, produced 340 bbls. from sand at 3,368-75 feet. No. 2 Shawver, SE cor. NE NW, Section 7-26-1, made 1,285 bbls. from sand at 3,368-76 feet.

Stearns & Streeter's No. 1 Woodman, NW cor. SW NW NE, Section 7-26-1,

(Continued on Page 143)

## WILDCAT OPERATIONS IN KANSAS

**BARBER COUNTY**

| Company, farm and location— | Remarks: |
|---|---|
| Allison & Fitzwilliams' No. 1 Morrisse, C NW SE SE Sec. 9-30-12w | Drlg. 900 ft. |
| Barbara Oil Co.'s No. 1 Lytle, CNL NE NE SW, Sec. 13-33-13w | Drlg. 4,645 ft. |
| Rolland et al's No. 1 Pickens, NE cor. NW NE Sec. 27-30-14w | Casing 8-in. 4,475 ft. |

**BARTON COUNTY**

| | |
|---|---|
| Everett & Wiley's No. 1 Ward, NW cor. SW Sec. 12-20-13w | Shut down 3,943 ft. |
| Mid-West Exploration Co.'s No. 1 Karst, SW cor. SW Sec. 11-16-15w | Granite 3,727-30 ft.; abandoned |
| Phillips and Shell's No. 1 McClellan, SE cor. SW Sec. 23-26-6e | Drlg. 1,215 ft. |

**BUTLER COUNTY**

| | |
|---|---|
| LaRobb et al's No. 1 Bronsenger, NE cor. SW Sec. 24-27-3 | Rig. |
| Aladdin Petroleum Co.'s No. 1 Bronsenger, NE cor. NE SW Sec. 24-27-3 | Rigging up. |
| Shell Petroleum Corp.'s No. 1 Thiesstin, C SE SW SE Sec. 10-24-3 | Drlg. 750 ft.; |
| Smith & Ash's No. 1 Donnelly, NE cor. NE Sec. 8-24-6 | Drlg. 980 ft. |

**CHASE COUNTY**

| | |
|---|---|
| Greiner & Fowler's No. 1 Carson, NE cor. NE Sec. 9-21-7 | Shut down 3,190 ft. |
| Marland Prod. Co.'s No. 1 fee, SW NE Sec. 8-31-8e | Rig. |

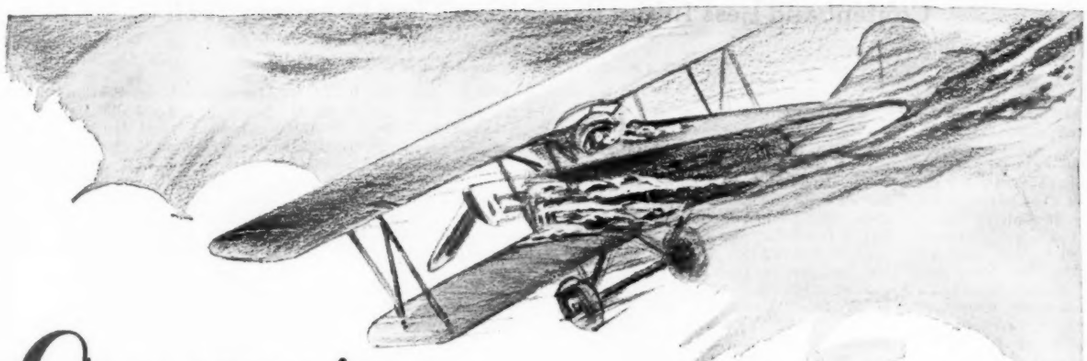
**CLAY COUNTY**

| | |
|---|---|
| Gray et al's No. 1 Smith, NE SE Sec. 30-6-3e | Rig. |

**COWLEY COUNTY**

| | |
|---|---|
| Cameron et al's No. 1 Zirkle, Sec. 35-31-3e | Drlg. 2,122 ft. |
| Pyle & Sutter's No. 1 Lindstrom, SW cor. NE Sec. 9-35-4 | Drlg. 3,535 ft. |
| J. B. Markey's No. 1 Tatum, SE cor. SW Sec. 11-31-6 | Shut down 520 ft. |
| Wakefield & Osborne's No. 1 Osborne, NW cor. NE Sec. 18-30-5 | Drlg. 2,130 ft. |

(Continued on Page 102)



# *Concerning* PARACHUTES *and* INJECTORS

THE aviator uses great care in selecting his parachute for he wants to feel certain that it will function properly when it is necessary to "go over the side."

Likewise, when the production superintendent sends steam rigs into remote locations, he is careful to select equipment which he knows will operate consistently and economically. Mechanical failures result in expensive delays.

This accounts for the universal preference in the oil fields for Penberthy Automatic Injectors for boiler feeding. They are recognized as thoroughly dependable under the most severe operating conditions.

A type and size to meet your requirements carried in stock by your nearest supply house.

PENBERTHY INJECTOR CO.
ESTABLISHED IN 1886 DETROIT CANADIAN PLANT WINDSOR, ONT.

# Offset to Ohio's Well Disappointing

## Champagnolle District Completion Shows Large Water Content and Less Initial Production Than Discovery Well

By D. H. Bancroft
*Staff Correspondent, Louisiana-Arkansas*

SHREVEPORT, La., Apr. 15.—Parallel in elevation, total depth and sand record with its predecessor, the first offset to Ohio Oil Co.'s No. 1 Raulston in Section 12-17-14 Champagnolle district of Union County, Arkansas, has been completed with approximately 500 bbls. less initial production and a considerably larger salt water content in the fluid. The offset is Arkansas Natural Gas Corp.'s No. 1 Morris in the SW cor. NW SE Section 7-17-13, about 600 feet east of the Ohio's well. The latter made 2,500 bbls. initial, 20 per cent water, total depth 3,037 feet just one month ago and the Arkansas well started off at the rate of 2,020 bbls. of fluid 80 per cent water and 5 per cent sand, turning 700 bbls. of net oil into the tanks in the first 15 hours. For the first hour it made at the rate of 100 bbls. through a 1-inch choke, slowing down as the head worked off. Of this 40 per cent was water and when the choke was cut to a half-inch it flowed 70 bbls. an hour 20 per cent water. The last 24-hour gauge gave it 660 bbls. net oil 70 to 80 per cent water. The oil is 26.5 gravity and is being taken by Lion Oil Refining Corp. During the next week or 10 days two more wells offsetting the Ohio's No. 1 Raulston and the Arkansas' No. 1 Morris are scheduled for completion. Ohio's No. 1 Oliver in the NW cor. SW SE Section 7-17-13 has 6⅝-inch cemented at 3,042 feet, total depth 3,048 feet, and No. 1 B. H. Raulston, NE cor. SE SE Section 12-17-14 is coring for casing seat at 3,001 feet.

Atlantic Oil Producing Co. and E. M. Jones made the first test in the Mount Holly district of Ouachita County following completion of the McDonald wells on the Wilson farm in Section 25-15-18. They ran a testing tool Wednesday and got 11 joints of salt water in the drill stem from two feet of sand at 2,857 feet, drilled to 2,865 feet with the last 3 feet in oil sand and were due to make another drill stem test on No. 1 Allen, Section 25-15-18, a quarter-mile northeast of C. H. McDonald's producer. The latter made 267 bbls. net oil on the last 24-hour gauge, pumping 67 bbls. more than it did when put on the beam a week ago. Drilling deeper after it failed to perform satisfactorily and eventually sanded up, McDonald Brothers' No. 1 Wilson, a quarter-mile south of the producer, was in hard sandy shale at 2,872 feet.

### Other Champagnolle Wells

Besides the Arkansas Natural Gas Corp.'s well, Champagnolle listed three other completions, one a producer in the gas territory on the west edge of the old deep sand area, one a good gasser in the same section and the third a failure in the midst of production. Lion Oil Refining Co.'s No. 2 Kelly, NW cor. SE SE Section 9-17-14 gauged 26,800,000 feet of gas at 900 pounds from 8 feet of sand, total depth 2,822 feet and No. 5 Rowland in the NE cor. NE NE Section 15-17-14 was abandoned at 2,858 feet. This latter was a workover. Completed last November at 3,207 feet it made 2,000 bbls. of salt water and 100 bbls. of oil, perforated casing at 2,845 feet and drilled to 2,850 feet where it was put on the air and made 3,000 bbls. of water, plugged back and cut casing again at 2,742 feet and got water the third time. Skelly Oil Co.'s No. 2 Kelly in the NE cor. SE Section 9-17-14 was its first producer in the field though the company has developed two or three good gassers. It was completed at 2,830 feet flowing 80 bbls. pipe line oil, one of the few producers in the shallow sand in the 3,200-foot area, all the others being gassers with several salt water and dry holes.

Smackover likewise appeared in the list with three completions, two of which were small pumpers. Gulf Refining Co.'s No. 8 Goodwin, Section 32-15-15, deepened from 2,372 feet where it was a 300-bbl. pumper on first completion, tested dry at 2,855 feet and was abandoned. Hollifield & McAlphin's No. 18 Giller in Section 10-16-15, pumped an initial 12 bbls. from the Nacatoch at 1,982 feet and Sam Richardson's No. 7 Lawton, in the same section pumped 25 bbls. initial from the same sand at 2,087 feet. Gulf Refining Co.'s No. 1 Cook, Section 1-18-15, a possible short extension southwest of the old El Dorado East Field which tested dry in the original pay at 2,156 feet, topped the red beds producing in Champagnolle at 2,895 feet and is in red shale at 3,061 feet. So far the Gulf's efforts to get red beds production in the East Field through deepening two old wells have failed.

### Richland Completions

Two wells in Richland were brought in during the week both going wild. The first, a wildcat extending the field a mile or so east, was killed and brought under control within a few hours and the second was in the way of being controlled this morning. The former is discussed as a wildcat and the latter is Magnolia Petroleum Co.'s No. 1 C. M. Noble in Section 36-16-5 down in the southwest corner of proven territory. It came in with an estimated 29,000,000 feet at 1,050 pounds, total depth 2,450 feet. As in the case of the Richland Operating Co.'s No. 1 Hemler in Section 30-16-7, the extension, it soon began making gas between the 8 and 6-inch casings but the Conservation Department's experts called in for advice snubbed in tubing, killed the leaks and are in a fair way to save both wells.

Magnolia's No. 4 Ira Cox in Section 23-21-10 Cotton Valley district of Webster Parish is estimated at 39,000,000 feet of gas at 1,360 pounds from 4,557 feet in the deep Trinity, a close rival to Palmer Corp.'s big well which has maintained its rock pressure and initial production for the past three or four months. Magnolia's No. 1 McCook & Hibbler, Section 22-21-10, got 115 feet of water on drill stem test at 4,812 feet and is waiting orders. Tested at 4,722 feet, already rather deep even for the Cotton Valley deep stuff, it showed for 300,000 feet of gas, and went on to present depth. No. 1 Denman, Section 1-22-11 in the Sarepta district which is running the greater part of the 260 bbls. credited to Sarepta-Cartersville, cemented 21 feet up from the bottom—2-719 feet—in an attempt to shut off water that appeared with oil.

G. W. Zoder completed No. 1 H. M. King, Section 13-10-1e Urania district La Salle Parish as a 100-bbl. pumpe total depth 1,524 feet and started No. on the same lease. Bayou State Oil Co No. 27 Jolly, Section 22-22-15, Hosst district of Caddo Parish, pumped initial 20 bbls. from 1,040 feet.

Experiments in deepening old produ ers in proven territory, prevalent in mo of the producing areas of this divisio whether gas or oil, appear to ha reached the Elm Grove district in Bo sier Parish, two such operations appea ing this week. F. M. Hood has gone ba to Omega Gas Co.'s No. 1 Mayer in Se tion 30-16-11 and started drilling at 2,2 feet and J. F. Palmer started maki more hole on Palmer & Hanby's No. McCann, Section 31-16-11, at 1,910 fe both having been gas wells at their fo mer total depth.

### Dixie's Deep Test

Dixie Drilling Co. has drilled o bridge in No. 92 Dillon, Section 13-21-1 to around 6,000 feet and hasn't mu farther to go before reaching the sand lime at 6,099 feet that made such vigorous show of excessively rich gas la December. The next 10 days or so shou be productive of some interesting develo ments in this well, and meanwhile t company has started a shallow test in th same section, No. 96 Dillon which h 6-inch set at 1,470 feet. W. D. Chew No. 2-B Fee, Section 33-21-16, Oil Ci district, tested salt water with a sho of gas in a stray sand at 907 feet an will set a siphon. Eastern Carbon C cut off the gas flow between second an third strings in No. 4 Bryson, Secti 8-17-16, Greenwood district—estimated 5,000,000 feet, total depth 2,770 feet, an cemented 6-inch at 2,330 feet.

### Production Stationary

Production from the several pools the division, measured in pipe line run was practically stationary with la week's shipments, the 108,405 bbls. pe day being 245 bbls. under last week average. Daily average runs from th several pools for the week were:

| | |
|---|---|
| **Louisiana** | |
| Caddo light | 8,0 |
| Caddo heavy | 3,2 |
| Homer | 3,9 |
| Haynesville | 5,4 |
| DeSoto-Red River | 3,9 |
| Elm Grove | 6 |
| Bellevue | 7 |
| Cotton Valley | 3,0 |
| Urania | 5,3 |
| Pleasant Hill | 4 |
| Sarepta-Cartersville | 2 |
| Total | 35,6 |
| **Arkansas** | |
| El Dorado | 4,1 |
| Smackover light | 6,2 |
| Smackover heavy | 49,1 |
| Stephens | 1,0 |
| Nevada | 1,2 |
| Lisbon | 1,4 |
| Champagnolle | 9,1 |
| Bradley | 1 |
| Total | 72,7 |
| Both States | 108,4 |
| Last week | 108,6 |
| Decrease | 2 |

### NORTH LOUISIANA

#### Bossier Parish

Elm Grove—F. M. Hood, deepenin No. 1 Mayer in Section 30-16-11, fo merly completed as Omega Gas Co.'s N 1 Mayer, is drilling at 2,200 feet. C W. Jones' No. 1 Horton, Section 31-16 11, set 100 feet of 10-inch and is dril ing at 850 feet. J. F. Palmer, deepen ing No. 4 McCann, Section 31-16-11, fo merly completed as Palmer & Hanby' No. 4 McCann, is drilling at 1,910 fee

#### Caddo Parish

Greenwood—Eastern Carbon Co. go stuck drill stem out of the hole, mudde off 5,000,000 feet of gas and cemente

(Continued on Page 129)

# WILDCATS CONFIRM EAST CARROLL AND EXTEND RICHLAND GAS FIELDS

By D. H. Bancroft

SHREVEPORT, La., Apr. 15.—Save for Woodley & Collins' No. 1 Harp in Section 22-22-7, Morehouse Parish, the fates that reward the efforts of the wildcatter were rather kind in Louisiana the past week, confirming a gas field in East Carroll Parish and extending proven area of the Richland Parish fuel reserve. It was a different story in Arkansas, and two tests in DeSoto and Bossier Parishes also failed.

Disappointment perched on the crown block of the Woodley & Collins well. The wildcat, which has commanded much attention, topped a white sand at 2,851 feet which hardened the further it was cored and, after a show of gas with salt water at 2,768 feet, it was believed a drill stem test at 2,864 feet would prove the real gas, but the 13 feet of this hard white sand had salt water at the bottom of it. Salt water filled 22 fourbles of drill stem in 5 minutes.

They cored on down to 2,901 feet, passing through more white sand from 2,892-96 feet and into a porous lime from 2,897-2,901 feet and are reaming for another drill stem test of this stratum. Checking 48 feet higher than The Texas Company's No. 1 Myers which had such an oil show last fall, the wildcat has lost its resemblance to that well since the salt water test, but regardless of results of the forthcoming test it will go on to 3,000 feet.

### Performance Exceeds Estimate

Palmer Corp.'s No. 2 O'Brien in Section 6-19-11, East Carroll Parish, estimated at 12,000,000 to 15,000,000 feet of gas on completion April 7, actually gauged 31,010,000 feet of gas at 1,050 pounds rock pressure in 7 feet of sand, total depth 2,337 feet, with 6 inch cemented at 2,331 feet, 1 foot in the pay. Location is a quarter mile northwest of the company's No. 1 O'Brien, completed a year ago gauging 51,900,000 feet of gas and 1,000 bbls. or more of salt water in 5 feet of sand, rock pressure 1,040 pounds, total depth 2,354 feet.

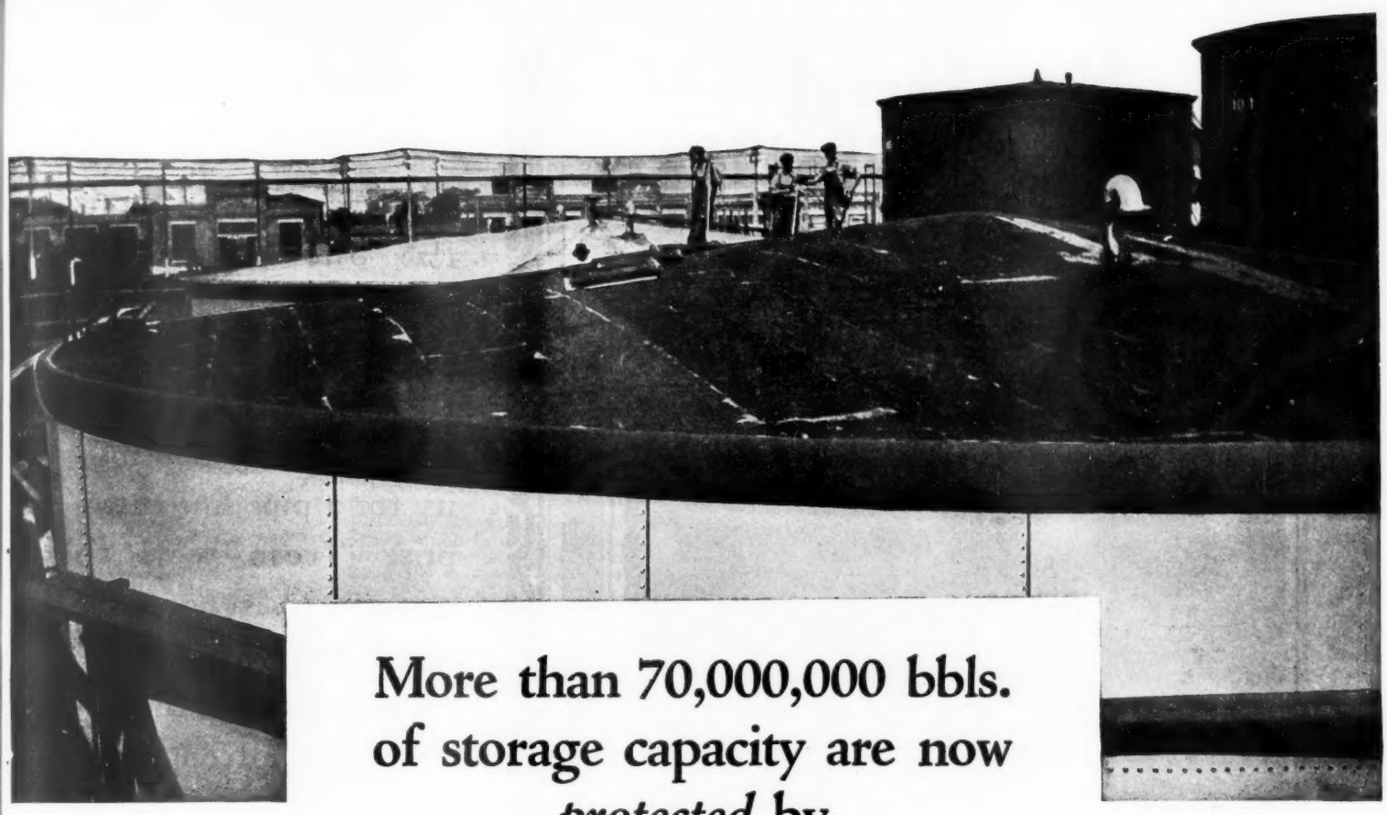
The dope was that No. 2 should check lower than No. 1, but it is higher. It does not prove up much territory, but it does confirm, apparently, presence of another gas field of large proportions in northeast Louisiana 30 to 50 miles east and northeast of nearest production in Monroe and Richland. Palmer Corp. owns most of the leases surrounding it, having a total of approximately 45,000 acres in that part of the country.

By coming in with 15,000,000 feet of gas from a total depth of 2,463 feet, Richland Operating Co.'s No. 1 S. R. Humble in Section 30-16-7, extended the field's proven area a mile east of nearest production, the same company's No. 1 Godfrey in Section 25-16-6, and No. 1 Taylor in Section 24-16-6. The same company's No. 1 Chapman in Section 19-16-7, a mile north and a little east, was a salt water hole at 2,495 feet. No. 1 Taylor made 3,500,000 feet from 2,474 feet, 13 feet lower than the Hemler, and No. 1 Godfrey made 55,000,000 feet from 2,463 feet, 8 feet higher than the extension. Incidentally this completion is reported running wild.

### D. C. R. Wildcat Awaits Trade Dicker

North Louisiana's next most interesting wildcat, D. C. R. Oil Co.'s No. 1 Hunter estate in Section 17-19-14, Caddo Parish, which stood 350 feet in 39 gravity oil before cementing 6-inch, is still an undetermined quantity, waiting for conclusion of dickers for a trade before drilling plug and bailing. Meanwhile two offsets reported last week have derricks up and will be making hole next week. R. W. Norton is reaming at 2,500 feet and walling the hole on No. 1 Fortner, in Section 32-21-16, preparatory to deepening this old test in the northwest cor-

(Continued on Page 129)



## More than 70,000,000 bbls. of storage capacity are now *protected* by

# Johns-Manville VAPOR-TIGHT *Insulated* Tank Tops

### *By reducing evaporation losses—J-M Tank Top pays for itself in six months*

BY sealing wood or steel deck tanks against wind drift and by insulating the vapor space against temperature change and consequent breathing losses, Johns-Manville Vapor-Tight Tank Tops have cut down evaporation losses to show an annual saving of more than $6,000 per year per tank of 55,000 barrel capacity. *This saving is not unusual.* Based on actual tests, we have records of estimated yearly savings as high as $15,000 per year per tank, equivalent to a return of 300% to 400% on the investment.

### *Reduction of Fire Hazard means worth while reduction of Insurance Rates*

In addition to the fire retardent value of the asbestos felt, the roof and eave construction are sealed vapor-tight to eliminate the danger of tanks being set on fire by the igniting of escaping vapors. On different occasions, tanks full of oil and gasoline that were protected by Johns-Manville Insulated Tank Tops have been exposed to adjacent tank fires and have come through with no damage to tanks or contents.

Thousands of barrels of oil are saved every year by the Johns-Manville Grounded Conductor Network. In more than 1000 installations of Johns-Manville Tank Tops applied over wood decks and equipped with this Grounded Conductor Network, not one fire has resulted from secondary lightning discharge.

We will gladly give you full information on this equipment.

JOHNS MANVILLE CORPORATION

# Johns-Manville

VAPOR-TIGHT INSULATED TANK TOPS
(Patented—Other Patents Pending)

JOHNS-MANVILLE CORPORATION
New York Chicago Cleveland San Francisco Toronto
*(Branches in all large cities)*

Please send me a copy of your booklet "Controlling Evaporation."

Name_____

Address_____

CI-44-4

# Unified Responsibility

The Hope Company is the one organization serving the natural gas and oil industry which is ready and qualified to assume entire responsibility for a pipe line enterprise "from well to meter." It is not only ready, but it has repeatedly done so—to the satisfaction of all concerned.

More than this, the Company is ready also to undertake field surveys, market analyses, and aid in financing and organization—as it has repeatedly done in the past.

HOPE

ENGINEERS CONTRACTORS

DESIGNERS MANUFACTURERS

HOPE ENGINEERING COMPANY

MOUNT VERNON, OHIO, U.S.A.

NEW YORK, N.Y. TULSA, OKLA. HOUSTON, TEX. LOS ANGELES, CAL.

# Record Austin Chalk Well Completed

## Gulf Production Co.'s No. 8 Carter in the Joe Bruner Field Is the Best Producer from That Horizon in Southwest Texas

By B. D. Stevenson
*Staff Correspondent, Southwest Texas Fields*

SAN ANTONIO, Tex., Apr. 15.—Gulf Production Co. last week brought in its No. 8 Carter in the Joe Bruner Field at 2,344 feet in the Austin chalk. It flowed 1,697 bbls. the first 11 hours and then settled to 80 to 100 bbls. an hour. It is the biggest Austin chalk prducer ever completed in Southwest Texas. Most of the wells in the Bruner Field which is north of the town of Luling in Caldwell County, have passed up the Austin chalk and been completed in the Edwards though there is profitable production in the Austin chalk.

Wind storms the middle of the past week wrecked derricks in several fields in Southwest Texas and leveled some wildcat derricks as well and is delaying a few completions.

In the Refugio Field the Mission Drilling Co.'s No. 1 Mitchell in the south edge of the town of Refugio and 1½ miles east of production, which last week looked like an oil well, is not in yet. The first test got salt water and mud. Total depth is 4,036 feet and it is a deeper sand by 300 feet than the deepest production in the field. The 19 feet of sand cored before setting casing disclosed oil and no indication of water or mud. When it bailed and swabbed salt water and mud the belief was general that there was a split casing or something wrong somewhere.

The coast country has great difficulty in getting cement to set properly. This could have caused the trouble. Late in the week an effort was still being made to run in a drill stem tester with a rubber packer. It was tried the third time without getting the packer to hold. It is possible that this 4,036-foot sand is the same as the 3,700-foot sand in the field but it would make the dip pretty steep.

### Saxet Gas Co. Gets Good Well

Saxet Gas Co.'s No. 6 Claude Heard reported completed last week as about a 1,000-bbl. well gauged 996 bbls. one day and 1,015 the next after flowing for several days. It is the best well probably in the field and is the farthest south in the field. It was completed at 3,688 feet. Saxet Gas Co. is moving to the No. 7 Claude Heard 300 feet south of the No. 6.

Houston Gulf Gas Co.'s No. 7 Fannie Heard, a west offset to the Mission Drilling Co.'s No. 1 Nellie B. Cummins, had the derrick blown down the past week. The No. 1 Cummins is an oil well completed some weeks ago and now pinched to 115 bbls. a day and it extended the field half a mile to the southeast. The Houston Gulf Gas Co.'s No. 3 Rogers on the west edge of the field and in an oil sand is also delayed in testing.

Operators in that field are expecting the No. 3 Rogers to make an oil well and they will not be much surprised if the No. 1 Mitchell off 1½ miles to the east of the field makes a well. There is some water trouble in some of the oil wells in the 3,700-foot sand but they are making a lot of oil and the impression is getting stronger that Refugio is going to be a big oil field spreading out wide and long.

Benedum & Trees, who bought the discovery oil well on the south from the Texas Gas Co. have delivered the 75,000 bbls. of oil they contracted to deliver to a Houston buyer and storage in the field is filling up. The understanding is the company will build two 55,000-bbl. tanks and store its oil. Saxet Gas Co. now has a 1,000-bbl. well with the product to dispose of in the south end of the field and a 400-bbl. well in the north end of the field.

### Joe Bruner Field

Twenty-three wells were reported completed in the Joe Bruner Field last week with a total initial production of around 7,000 bbls., some flowing and some on pump. The only significance attached to any of the wells in that field at this time, however, is to the wells in the northeast end, the others merely adding production to the field and filling in territory sure to be productive.

In the northeast end of the field the farthest out well is the Buchanan No. 1 Briscoe, drilling at 2,626 feet. There is nothing visible to keep it from making a producer but much depends on it to show which way the field will run. Humble's Nos. 1, 2 and 3 Hanson in that end of the field are all waiting on cement to set and Shell Petroleum Co.'s Nos. 1 and 2 New are in the Edwards with casing set. The No. 3 New reported last week flowed 1,000 bbls. of oil. There were 15 new locations made in the field to take the place of the 23 tests completed.

The Cranfill & Reynolds and T. C. Hadley's No. 1 Hanson in the northeast end of the field reported last week with the Edwards lime at 2,619 feet, the highest in the field, made an initial production of 700 bbls., swabbing and bailing.

Outside of the Joe Bruner Field the only producers completed the past week in the San Antonio area were the Atlantic Producing Co.'s No. 4 Yoast at 1,450 feet, swabbing 17 bbls. and The Texas Company's No. 4 Yoast at 1,491 feet, a 400-bbl. well, both wells being in the Yoast Field in Bastrop County, and a 4-bbl. well completed by Amelia Balzart in the Doborowolski Pool in Bexar County at 725 feet.

### Laredo District

The Laredo district passed another quiet week. G. M. Partee and associates' No. 1 Moody in the Schoolfield-O'Byrne Pool in Duval County came in flowing 250 bbls. of oil by heads through the open casing. Tubing is being run and it is believed it will make more. The well is 800 feet southeast of the line of the field and got the sand at 2,349 feet which is about 4 feet high and the well in the direction of the dip and should have got the sand lower according to ordinary calculations. In the same field but on the opposite side and as far west of the line as the other is east the S.&O. Oil Co.'s No. 3 Bowe has a sand at 2,312-14 and has set casing. It is quite high. There seems to be no certainty that this is a fault field as at first thought.

There were two 50-bbl. wells completed in the Laredo district last week, one the Laredo Oil Co.'s No. 14 Killam in the old Schott Pool, and the other O. W. Killam's No. 13 Cuellar in the new pool in Zapata County near the Jennings Gas Field. Sun Oil Co.'s No. 3 Norton in the Schoolfield-O'Byrne Pool in Duval County made several heads and has 1,000 feet of oil in the hole and looks like a 100-bbl. well.

### COMPLETIONS

#### Bexar County

W. H. Kennon's No. 1 fee (formerly No. 14), Survey 4, completed small gas well.

Amelia Balzart's No. 2 J. P. Adams, Cortari Survey, completed at 725 feet, 4 bbls.

#### Caldwell County

Cranfill & Reynolds' No. 1 Hanson, James Hinds Survey, completed 2,643 feet for about 600 to 700 bbls.

Gulf Production Co.'s No. 3 W. O. Allen, Gerren Hinds Survey, completed at 2,747 feet pumping 144 bbls.

Gulf Production Co.'s No. 8 M. Tiller, Gerren Hinds Survey, completed 2,722 feet pumping, a small well, not estimated.

Gulf Production Co.'s No. 8 Carter, Gerren Hinds Survey, has been completed at 2,344 feet, 1,697 bbls. first 11 hours, now flowing 100 bbls. an hour.

Gulf Production Co.'s No. 7 Carter, Gerren Hinds Survey, has been completed at 2,674 feet, pumping 50 bbls.

Humble Oil & Refining Co.'s No. A-7 Moses & Baggett, Gerren Hinds Survey, completed at 2,654 feet for 400 bbls.

Humble Oil & Refining Co.'s No. B-7 Moses & Baggett, completed at 2,668 feet for 125 bbls.

Humble Oil & Refining Co.'s No. A-3 Tiller, completed at 2,700 feet for 300 bbls.

Humble Oil & Refining Co.'s No. B-6 Moses & Baggett, has been completed at 2,712 feet pumping, not estimated, but small well.

Shell Petroleum Corp.'s No. 3 New, James Hinds Survey, has been completed at 2,743 feet pumping about 632 bbls.

Sun Oil Co.'s No. 6 Malone, A. Floyd Survey, has been completed at 2,729 feet, pumping 50 bbls.

Towns & Porter's No. 5 Hickman, Gerren Hinds Survey, completed at 2,735 feet for 30 bbls.

#### Duval County

Sun Oil Co.'s No. 3 Norton, Survey 250, Block 19, has been completed at 2,344 feet, flowing by heads.

G. A. Partee's No. 1 Moody, Survey 60, completed at 2,354 feet, flowing 250 bbls. through tubing.

#### Refugio County

Houston Gulf Gas Co.'s No. 1 N. B. Cummins, completed at 3,680 feet for 115 bbls. pinched in and with about 14,000 bbls. accumulated in storage.

#### Webb County

Laredo Oil Co.'s No. 14 Killam, Survey 457, has been completed at 1,656 feet for 50 bbls.

#### Zapata County

O. W. Killam's No. 13 Cuellar, Cerrito Blanco Grant, has been completed at 1,483 feet for 50 bbls.

### ABANDONED TESTS

#### Bastrop County

Loomis & Jarmon's No. 1 Hendricks, between Yoast Field and Cedar Creek is dry and abandoned at 1,788 feet.

#### Bexar County

William M. Morgan's No. 1 E. S. Bridge is dry and abandoned at around 800 feet, hole lost there.

Allen Burnam's No. 1 Ward has been abandoned dry at 1,966 feet.

#### Caldwell County

Alexander & Smith's No. 1 J. W. Gomillion, G. Pace Survey has been abandoned dry at 1,966 feet.

#### Guadalupe County

The Texas Company's No. 1 Lambrecht has been abandoned dry 70 feet in the Edwards.

#### Gonzales County

L. P. Unkel's No. 1 Lumm & Bouldin, R. Ward Survey, has been abandoned at 380 feet.

The Texas Company's No. 1 Larkin, W. Turner Survey, location has been abandoned.

#### Lavaca County

The Texas Company's No. 1 Russek,

(Continued on Page 131)

## UNIT OPERATION IN GUADALUPE PLANS TEST PROBABLY TO EDWARDS

By B. D. Stevenson

SAN ANTONIO, Tex., Apr. 15.—Guy Fisher is arranging to drill a wildcat test a little south of the Guadalupe River in Guadalupe County and near the east county line. The feature of it is that it is the first in Southwest Texas to be drilled on the unit plan wherein major companies and others purchasing protection in the block get undivided interests rather than a specific spread of acreage. The geology on the block was worked out by Dr. W. R. Calvert, geologist for the Grayburg Oil Co. and it will be a 4,200-foot test which will carry it probably into the Edwards lime.

With the exception of some slight showings purely wildcat territory in Southwest Texas has been rather free of interesting details. A windstorm blew down a few derricks in some of the fields as well as some wildcat derricks.

Joe Bruner's No. 1 Miller in Gonzales County at 1,710 feet and expecting in the next 100 feet or over to pick up something has stopped to set a string of surface casing and will resume drilling this week.

### Maverick County

In Maverick County, the Rycade Oil Corp.'s No. 3 Chittim is drilling at 3,419 feet and carrying the same showing of oil it had at 3,007 feet with no increase.

In Guadalupe County, both the Shell Petroleum Corp. and the Simms Oil Co. are starting new tests. The Shell is rigging up for its No. 2 Charles Grein a short distance from No. 1 Grein south of Seguin. No. 1 was recently abandoned at 2,238 feet with sulphur water. It was in the A. Mansola Survey, 530 feet from the west line and 150 feet from the south line. Simms Oil Co. abandoned its No. 1 Jandt west of Seguin at 1,502 feet and in the Edwards lime and with sulphur water. It is skidding the derrick a little to the southwest of No. 1 and the location for No. 1 was in the J. D. Clements Survey 150 feet to the north and west lines.

More evidence of shallow oil across the southern part of Bexar County has been disclosed in five water wells drilled for the new United States Government Randolph Field, a few miles northeast of San Antonio. At around 250 to 300 feet there were good showings of oil in each and I. L. Dingman has leased a big tract adjoining and will drill a deep test.

Rain in Milam County has delayed work there and none of the wildcat locations around Michalk & Clark's No. 1 Johnson have done much since a week ago.

### Laredo District

In the Laredo district, William F. Morgan is down to the sand in his No. 3 King-Harper, getting the sand at 1,719 feet. This is the third attempt to find oil in the north end of the Cole gas field in Duval County. The first two tests came in gas wells.

In the north end of the Kohler ranch where Humble Oil & Refining Co. and Reiter-Foster got three joints of oil on a drill stem test in the No. 17 Kohler at 2,262-75 feet, they have resumed drilling and are now down to 2,629 feet. This test is about a mile northeast of the four 2,800-foot oil wells drilled by the same companies. The same interests' Nos. 18

(Continued on Page 135)

**Halliburton did to Oil Well Cementing what Gustavus Swift did to packing, James J. Hill to railroading and John D. Hertz to taxicabbing—raised it to new levels of efficiency, introduced into it new standards of service, and brought to it new ideas of what can be done with resourcefulness, properly applied.**

HALLIBURTON OIL WELL CEMENTING CO.
*Duncan, Oklahoma*

# Two Completions at DeWalt Dome

## Increase in Coastal Daily Average Production Due to Previous Completions Rather Than to New Producers

By Nell Williams
*Staff Correspondent, Gulf Coast Fields*

HOUSTON, Tex., Apr. 15.—There were few developments of interest in Gulf Coast Field operations the past week. Another increase in the daily average production was indicated, but this was due not to new wells but rather to the flush output added by completions the previous weeks in several of the newer developing pools. Several fields were hard hit the forepart of the week by destructive winds which leveled scores of derricks, Lockport alone losing 20 and Humble more than 40. This forced the shutting in of an appreciable amount of pumping production in these fields, but new production offset this loss. Heavy rains and storms have slowed up operations materially in other fields.

Two new wells at DeWalt, Fort Bend County, and a 1,500-bbl. addition at Pierce Junction were among the principal completions of the week but none of these offered any extensions of producing area. The latter well since completion has increased its flow to above 1,900 bbls. daily, indicating a very good well for Pierce Junction.

At DeWalt, Humble Oil & Refining Co.'s No. 6 Sugarland came in Saturday morning flowing an estimated 1,000 bbls. of pipe line oil daily from a sandy shale at a total depth of 3,733 feet. It is flowing through 2-inch tubing. DeWalt's other new well, Humble's No. 1-A Bankers Mortgage, was completed earlier in the week. It flowed initially at the rate of 1,300 bbls. daily from sandy shale at 3,458 feet.

### Barbers Hill Deep Sands

The deep sands on the southeast and also southwest flanks of Barbers Hill, which have raised that field to prominence in the producing column of coastal fields yielded only one small well, this being Mills Bennett Production Co.'s No. 2 Kirby, which flowed an estimated 380 bbls. daily of 26.4 gravity oil from sandy shale at 5,397 feet. However, the holding up of production in the other deep wells with a substantial increase in the flow of Yount Lee Oil Co.'s No. 3 Chambers on the southeast to above 4,300 bbls. was sufficient to maintain the daily average output of the field during the week to above 12,000 bbls. Eleven deep tests were drilling at the "hill" Saturday, three of which were at the pay level and should be tested sometime the early part of this week.

Activity at the newly opened field at the Old Hackberry Dome, Cameron Parish, Louisiana, has subsided to a large extent. Completions of the past several weeks have tended to limit production to a small area and comparatively few new operations are being started to offset completions. Pure Oil Co. brought in two two wells the past week, Nos. 1 and 2 Duhon, the former flowing 272 bbls. daily off from sand at a total depth of 3,197 feet and No. 2 flowing 182 bbls. at 3,140 feet. The oil in each well tested 24.9 gravity at 84 degrees. Three other tests were swabbing at the close of the week and another was waiting a pumping rig.

### Raccoon Bend Well

Raccoon Bend, where several important tests have been expected in, added only one small well, this being Humble Oil & Refining Co. and Valley Oil Corp.'s No. 2 Kearns, which flowed initially an estimated 175 bbls.

Other completions included Blakely & Means' No. 2 Blakely, Blue Ridge, flowing 300 bbls. of 26.6 gravity pipe line oil at 3,722 feet; Sun Oil Co.'s No. 41 Mitchell, Liberty, pumping 150 bbls. of 43.7 gravity oil, 2,156 feet; Jennings Petroleum Co.'s No. 2 Eunice-Crowley, Jennings, flowing 250 bbls., 25 per cent water, 4,297 feet; Green Oil Co.'s No. 6 Moore, Edgerly, pumping 75 bbls. net oil, 2,934 feet; Vinton Petroleum Co.'s No. 21 Vincent, Vinton, flowing 100 bbls., 2,967 feet; Brownie-Babbett Oil Co.'s No. 5 McLean, pumping 20 bbls. net oil, 3,109 feet.

Among abandonments were Rycade Oil Corp.'s No. 6 Bouillon fee, Bayou Bouillon, salt, 3,702 feet; Humphreys Corp.'s No. 6-B Kirby, Barbers Hill, junked hole, total depth, 5,808 feet; Sun Oil Co.'s No. 2 Rogers, Boling, dry in shale, 4,489 feet.

### Barbers Hill—Chambers County

Joe Bashara's No. 1 Tarbutton, southeast flank test, has been deepened to 5,228 feet and is coring oil sand. Unice Oil Co.'s No. 1 Feldman is drilling shale at 3,286 feet. Mills Bennett Production Co.'s No. 2 Smith is drilling gumbo at 4,600 feet. This company's No. 1 Hamman-Armstrong has spudded. Humphreys Corp.'s No. 7-A Kirby is drilling gumbo at 1,995 feet. This company's No. 1 Tarbutton is drilling lime rocks at 2,183 feet. Its No. 6-B Kirby has been abandoned as a junked hole at 5,416 feet, total depth at 5,808 feet. Rexal Petroleum Co.'s No. 1 McLean is drilling gumbo at 2,014 feet. Talbert & Markle's No. 1 Ellfrey is drilling gumbo at 3,690 feet. Bennett's No. 1 Barber, north flank, is drilling gumbo at 3,676 feet.

On the southwest flank, Gulf Production Co.'s No. 1 Fisher Fee, has reached an oil sand and has set 6⅝-inch casing at 5,156 feet. Sun Oil Co.'s No. 1 Chambers is coring oil sand at 5,257 feet. Yount Lee Oil Co.'s No. 4 Chambers is drilling gumbo at 1,466 feet and its No. 5 Chambers is rigged.

### Boling—Fort Bend and Wharton

Sun Oil Co.'s No. 2 Rogers, east flank, has been abandoned as dry in shale at 4,489 feet. The Texas Company's No. 1 Pleasants is drilling blue gumbo at 3,485 feet. Scott & Peck's No. 1 Armstrong still is shut down at 5,189 feet.

### Daily Average Production

Daily average production of coastal fields for the week ending April 13 totaled 154,597 bbls., an increase of 3,423 bbls. over the previous week. One year ago (the week ending April 14) the daily average of coastal fields was 121,720 bbls., or 32,877 bbls. less than at this time.

Southwest Texas Fields whose production has been climbing sharply each week, gained only 352 bbls. in the daily average the past week. The gain was due to fields in the Luling area.

Daily average production by fields in the Gulf Coast and Southwest Texas was:

**GULF COAST**

| | |
|---|---|
| Allen | 9 |
| Barbers Hill | 12,307 |
| Batson | 1,496 |
| Big Creek | 2,805 |
| Blue Ridge | 3,548 |
| Brenham | 150 |
| Boling | 1,867 |
| Clay Creek | 3,618 |
| Damon Mound | 675 |
| De Walt | 10,834 |
| Fannette | 712 |
| Goose Creek | 6,565 |
| High Island | 1,170 |
| Hull | 9,441 |
| Humble | 6,402 |
| Jasper | 30 |
| Markham | 360 |
| Nash | 625 |
| North Dayton | 450 |
| Orange | 3,012 |
| Orchard | 715 |
| Pierce Junction | 15,788 |
| Raccoon Bend | 2,299 |
| Saratoga | 942 |
| Sour Lake | 2,696 |
| South Liberty-South Dayton | 5,854 |
| Spindletop | 32,673 |
| West Columbia | 6,487 |
| Total | 133,530 |
| Total previous week | 129,227 |
| Increase | 4,303 |

**SOUTH LOUISIANA**

| | |
|---|---|
| Anse La Butte | 45 |
| Bayou Bouillon | 295 |
| Edgerly | 687 |
| Jennings | 945 |
| Hackberry | 7,127 |
| Lockport | 3,780 |
| Sorrento | 408 |
| Starks | 500 |
| Sulphur | 2,700 |
| Sweet Lake | 365 |
| Vinton | 4,180 |
| Welsh | 35 |
| Total | 21,067 |
| Total previous week | 21,947 |
| Decrease | 880 |
| Total Gulf Coast | 154,597 |
| Total previous week | 151,174 |
| Increase | 3,423 |

**SOUTHWEST TEXAS**

| | |
|---|---|
| Dale | 480 |
| Branyon | 27 |
| Bruner | 40,435 |
| Gonzales | 90 |
| Kingsville | 276 |
| Larremore | 171 |
| Luling* | 12,149 |
| Lytton Springs | 1,005 |
| Maverick | 0 |
| McMullen | 56 |
| Medina | 30 |
| Miranda | 11,876 |
| Refugio | 2,352 |
| Somerset | 1,918 |
| Yoast | 2,114 |
| Total | 72,979 |
| Total previous week | 72,627 |
| Increase | 352 |

*Includes: Caldwell County, 7,528 bbls.; Guadalupe County, 4,621 bbls.

### Raccoon Bend—Austin County

Humble Oil & Refining Co.-Valley Oil Corp.'s No. 3 Urban is waiting for cement to set to test an oil showing sand at a total depth of 3,294 feet. These operators' No. 3 Hardie is drilling sandy shale at 3,138 feet. No. 4 Hardie is a location. No. 1-D Grawunder, 9,000 feet south of production, is drilling shale at 2,748 feet. No. 2 O. Wilson is drilling shale at 438 feet. No. 4 E. B. Wilson is drilling sandy shale and lime at 958 feet. No. 2 Dietrichs is waiting for cement to set to test at 3,308 feet. No. 3 Roy Thompson is drilling shale at 2,929 feet. No. 2 Saunders is drilling sandy shale at 2,716 feet. No. 1 Mueller is waiting for cement to set at 1,815 feet. No. 1 Wilson heirs is drilling shale and sand at 1,155 feet. No. 2-A Washington is drilling shale and lime at 1,637 feet. No. 1 Buchanan late in the week was

(Continued on Page 136)

# IMPORTANT SOUTHWEST EXTENSION OF BOGGY CREEK FIELD, EAST TEXAS

By Nell Williams

CORSICANA, Tex., Apr. 15.—Blowing 4,000,000 feet of dry gas, Humble Oil & Refining Co.'s No. 1 Purvey on the south side of the Boggy Creek Dome, Anderson County, was completed the past week. The well is southwest of the Boggy Creek Field and marks an important extension of operations. The gas is from a sandy shale at approximately 3,700 feet.

Another wildcat in East Central Texas, Milam Oil & Gas Co.'s No. 2 White, Taylor Survey, Milam County, was brought in as a gasser, making 1,260,000 feet of dry gas daily from sand at 1,362 feet.

On the Bethel Dome, Anderson County, Pure Oil Co. met with another failure in its No. 2 Willie Bruce, which was abandoned below 4,400 feet. Pure Oil Co., however, is continuing its steady drilling program on this dome, so far unproductive, and has rigged up for No. 1 Jackson, T. H. Kennely Survey.

Other operations in the division were more or less routine. At Boggy Creek, Humble Oil & Refining Co.'s No. 1 Neches River, has been shut down waiting orders at 3,784 feet. No. 2-B Elliott & Clark has been rigged up. No. 1 Gauger is drilling green sand and shale at 3,503 feet. No. 2 Roberts is drilling sandy shale at 1,210 feet. No. 1 Holt is rigging up. The latter, in Cherokee County, is 4,000 feet north of production on the east side of the dome.

At Keechi Dome, Anderson County, J. S. Cosden and associates are fishing stuck drill stem at 3,861 feet. Magnolia Petroleum Co.'s No. 1 Duran, Pine Hill, Rusk County, has set 15½-inch casing at 355 feet. Amerada Petroleum Corp.'s No. 1 Wade, Upshur County, has resumed drilling after a fishing job at 2,284 feet. In Van Zandt County, Pure Oil Co. has made location for No. 1 Henderson, one of a series of core tests being made by that company in this county and Smith County.

Lufkin Oil & Gas Co.'s No. 1 Collmorgan, Angelina County, is drilling sandy shale at 704 feet. Gruver & Stiles' No. 2 Stiles, Satan Survey, Falls County, is drilling broken lime at 953 feet. Humble Oil & Refining Co.'s No. 1 Pieper, Falls County, L. Thurman Survey, is rigged. Yoast & Hicks' No. 1 Pamplin, Pillow Survey, Falls County, is drilling Georgetown lime at 3,773 feet.

Haley & Young's No. 1 Night, Freestone County, is drilling hard shale at 3,908 feet. Henderson Petroleum Co.'s No. 1 Cade, southeast of Chandler, Dorsey Survey, Henderson County, is shut down in sandy shale at 1,436 feet. Patty and associates' No. 1 Randall, Leon County, is drilling at 326 feet after setting a string of 8¼-inch casing at 324 feet.

In Limestone County, C. F. Lytle and associates' No. 1 Thompson, Mexia Trinity test, is drilling sandy shale showing salt water at 6,045 feet. A. F. Richardson's No. 1 Jones, Limestone County, is shut down in sticky shale at 1,302 feet.

Bosque Oil & Gas Producing Co.'s No. 1 Johnson, McLennan County, Hall Survey, is drilling broken lime at 124 feet. Bonwell & Hill's No. 1 Booher, Swoap Survey, Milam County, is drilling shale and lime at 1,645 feet. Rodgers & Peat's No. 1 Duncan, Milam County, has spudded.

Daily average production in East Central Texas for the week ending April 13 was 20,391 bbls., a decrease of 427 bbls. Figures by fields are:

**EAST CENTRAL TEXAS**

| | |
|---|---|
| Boggy Creek | 3,377 |
| Cedar Creek | 125 |
| Currie | 455 |
| Mexia | 5,519 |
| Minerva | 683 |
| Nigger Creek | 335 |
| Powell | 8,277 |
| Richland | 395 |
| Thrall | 35 |
| Wortham | 1,190 |
| Total | 20,391 |
| Total previous week | 20,818 |
| Decrease | 427 |

*The* PRINCIPLE OF KELLOGG SERVICE ELIMINATES CONSTRUCTION DELAY

The complete coverage of a Kellogg contract has become known to leading executives as Kellogg Service. From the day of agreement to the specified date of operation, Kellogg engineers are exacting in the accomplishment of construction work as scheduled. The satisfaction afforded by Kellogg Service is reflected in the volume of new business from old customers.

*The* M. W. KELLOGG COMPANY

*225 Broadway, New York*

HOUSTON, TEXAS, 1514 PETROLEUM BLDG. LOS ANGELES, CAL., 1031 SO. BROADWAY TULSA, OKLA., PHILTOWER BLDG.

# New Strike Made on Rattlesnake Dome

## Continental Gets Production in Lower Pennsylvanian at 6,771 Feet. Discovery May Have Far Reaching Possibilities

By Tolbert R. Ingram
*Staff Correspondent, Rocky Mountain Area*

DENVER, Colo., Apr. 13.—A strike which may rank among the major discoveries in the Rocky Mountain area in recent years has been made in the Continental Oil Co.'s No. 17, on the Rattlesnake Dome in San Juan County, New Mexico, which encountered oil in the lower Pennsylvanian at 6,771 feet after passing through a horizon making large quantities of salt water. This is not only the deepest well in New Mexico, but the first to test the Pennsylvanian in the Navajo Reservation where there are several structures producing unusually high gravity oil from shallow sands. Cranfill & Reynolds' No. 1 Wilson, Section 23-25-36, in Lea County, is shut down for storage after flowing 123 bbls. in 12 hours. The Midwest Refining Co.'s No. 19 Farnsworth in the Jal district has sulphur water at 4,065 feet and its No. 13 Farnsworth has been completed as a 35,000,000-foot gasser. The Pueblo Oil Co.'s No. 1 Crosby, in the Jal district, has 2,000,000 feet of gas at 2,614 feet.

Utah had one abandonment in Price River Petroleum Co.'s test in Carbon County and two new operations are starting in Washington County.

Colorado had one completion in the Midwest Refining Co.'s No. 7-M on the Iles Dome in Moffat County which swabbed 35 bbls. after standing 24 hours. The Vineland district southeast of Pueblo has ceased to be a hot spot with no producers opened up around the discovery well which probably will never be tested.

Wyoming had one abandonment in Fremont County in Martin B. Falk's No. 2 on the South Derby Dome which ran into water. The Texas Company's refinery at Cody has commenced running crude and most of the wildcats remain shut down.

### NEW MEXICO

A discovery which may have far reaching consequences and prove to be one of the most important made in the Rocky Mountain area for a long time has taken place in the Continental Oil Co.'s No. 17 on the Santa Fe Corp.'s Indian lease on the Rattlesnake Dome in the Navajo Indian Reservation in San Juan County, northwestern New Mexico. The well is located in the C NE, Section 2-29-19, 12 miles east of the Arizona boundary, 35 miles west of Farmington and 18 miles south of the Colorado line. After encountering water in the lower Pennsylvanian formation at 6,730 feet, which made the test look like a failure, it was drilled a little deeper and at 6,771 feet ran into oil. The quantity of oil has not at this time been determined, but officials of the company declare that it looks commercial and they are hopeful of bringing in a good well as soon as it can be completed. The fact that the oil rose through a column of 6,700 feet of salt water and flowed over the top indicates considerable pressure back of it and points to a discovery of major importance. The hole is cased with 4¾-inch to 6,500 feet. Below the casing the hole is open and making some gas. Whether the pressure that is making the well flow oil and water comes from this gas or from new gas at the bottom has not yet been determined.

This operation is of more than ordinary interest not only on account of the volume of oil it may produce, but due to the discovery of a new producing horizon in an area that offers some unusual features and to the bearing it will have on other structures in the immediate vicinity. The Rattlesnake, Hogback and Table Mesa Domes, all in the Indian Reservation, produce unusually high gravity oil from the Dakota formation at 600 to 1,300 feet, the depth on the Rattlesnake Dome being around 800 feet. The oil from the Dakota on Rattlesnake averages around 65 degrees gravity and sometimes goes up to 70 degrees. It is very volatile and there is a heavy evaporation loss in transporting it. There was a belief in some quarters that the high gravity of the oil was due to filtration as it rose from deeper horizons whole others expressed the opinion that heat action had destroyed any oil that might have been in the deep sands and that the product in the shallow sands was an oil that had escaped destruction and had been refined by heat action. Also, there was considerable doubt as to the thickness of the underlying beds and whether they were within reach of the drill.

#### Considerable Hard Luck

None of these structures had been tested to the deep sands until the Continental started its No. 17 in September, 1925. This well has been drilling ever since and has had more than the average share of bad luck from almost every cause known to the drilling fraternity. It had a production of around 2,500 bbls. a day in the Dakota which was cased off. It had shows of oil, gas and water and its fate hardly could be judged by what the log showed. While the log has not been made public, it is believed that the hole was around 2,000 feet in the Pennsylvanian when the oil was found. The gravity of the oil is approximately 38 degrees and it is green in color with paraffin base. Its mixture with the high gravity oil from the upper sands will be a very desirable factor.

Dean E. Winchester, who mapped the structure and spotted the first well, expresses the opinion that the gravity of the oil in both the upper and lower horizons confirms his theory of natural metamorphism. He points out that the normal gravity of Dakota crude is 34 to 36 gravity and of Pennsylvanian crude in this territory 20 gravity. Both have been stepped up to degrees that indicate heat refinement as well as filtration and pressure. The discovery opens very promising possibilities not only for the deep sands in the proven structures but in other structures that were barren in the shallow horizons. The well is believed to be the deepest ever drilled in New Mexico. There are 12 producers on the structure in the Dakota which produced 250,000 bbls. last year. This does not, however, represent the capacity of the wells as they were pinched in. The field is served by a pipe line to Farmington where the Continental has a refinery and another to Gallup, a distance of 95 miles.

The Rattlesnake lease consists of 4,800 acres which S. C. Munoz purchased at auction in the fall of 1923 for $1,000. The romance of the thing is that Mr. Munoz made his bid just to start the bidding, having no idea that he would get the lease. Most of the operators did not look with favor upon the possibilities of the structure. The Producers & Refiners Corp. drilled the first well under contract then the Santa Fe company took over the operation. Later on the Continental made a deal for an interest in the shallow production followed by the purchase of a half interest in the entire lease.

#### Jal District Producer

Cranfill & Reynolds' No. 1 Wilson, NW NE, Section 23-25-36, in the Jal district in Lea County, the latest well to show for a producer in that area, is shut down at 3,355 feet in lime waiting for the erection of storage for a test. It had cut 5 feet of the pay when drilling stopped and flowed 123 bbls. in 12 hours with a back pressure of 600 pounds. There is approximately 500,000 feet of gas with the oil. This well is 1½ miles north of the Skelly Oil Co.'s No. 1 Joyner, and the same distance west of the Marland's No. 1 Sholes. The Texas Production Co.'s No. 1 Lynch, NW cor. SE, Section 34-20-34, swabbed 639 bbls. in 12 hours from a total depth of 3,731 feet and the fluid was lowered from 3,650 feet to 2,450 feet. It was shut in for storage and three 500-bbl. tanks are being erected for a test.

The Pueblo Oil Co.'s No. 1 Crosby, SW SW, Section 29-25-37, in the Jal district, 1¾ miles north of the Texas Production Co.'s No. 1 Shepherd, is bottomed at 2,614 feet in black shale and lime and fishing for tools. At this depth it was making approximately 2,000,000 feet of gas and looks very promising. The Midwest Refining Co.'s No. 13 Farnsworth, NE NE, Section 13-26-36, is listed as a completion at a total depth of 3,127 feet. It gauged 35,000,000 feet of gas. The same company's No. 19 Farnsworth, SW SW, Section 12-26-37, is drilling at 4,065 feet in sandy lime with 800 feet of sulphur water in the hole. It is doubtful if it will be carried much deeper as it is below the gas and oil horizons in the wells to the west.

In the Hobbs district, the Midwest's No. 31 Capps, SW cor., Section 3-19-38, is drilling at 650 feet in red shale with the hole full of water, and the Ohio Oil Co.'s No. 1 State, NE cor. NW, Section 7-19-39, was about ready to commence spudding when it was decided to wait for an extension on the permit. Its No. 1 State, NE cor., Section 14-22-36, a location, is temporarily abandoned. Cecil Bordages is reported to have made a location for his No. 2, NE Section 20-19-38. The Vacuum Oil Co.'s No. 1 State, Section 13-17-34, is drilling in anhydrite at 2,770 feet, the last salt being at 2,710 feet. A. D. Morton's No. 1, Section 32-11-38, in the Tatum district, is shut down at 1,600 feet in sand, and Henderson, Dexter & Blair's No. 1 McDonald & Jewett, SE cor., Section 18-20-34, is drilling in salt at 2,730 feet. The Texas & Pacific Coal & Oil Co.'s No. 1 State, SE SW, Section 22-23-36, is coring at 3,362 feet in brown lime.

#### Other Operations

In Eddy County, George F. Getty, Inc.'s No. 4 Dooley, C W half SE NE (corrected) Section 23-20-29, in the Twin Mounds district southeast of the Artesia Pool, is drilling at 1,398 feet in lime. It found a pay at 1,345-48 feet which flowed 30 bbls. in six hours. The oil is 21 gravity with an asphalt base. The hole is to be a deep test. Same company's No. 3 Bates & Martin, SE cor. SW, Section 31-20-29, is bottomed at 765 feet in gypsum. The 10-inch was set at 765 feet and it is shut down for cement to harden. In the Artesia district the Grayburg Oil Co. has made a location for its No. 2 Root, SW Section 7-17-30, and its No. 1 Burch, C NW SW, Section 19-17-

(Continued on Page 114)

## NEW RECORD FOR PRODUCTION ESTABLISHED IN TURNER VALLEY

By Victor Lauriston
*Staff Correspondent, Canadian Fields*

CHATHAM, Ontario, Apr. 13.—With total deliveries of 56,701 bbls. in March, the Turner Valley Field established a new record of production, passing its previous record of December, 1928, when deliveries reached 48,505 bbls. The production totals are based on official figures showing deliveries to the Imperial and Regal refineries. Home Oil Co.'s No. 1 was largely responsible for the increase. It was the first well in the field to show a larger output for any one month than Royalite's No. 4 gusher, production of Home's No. 1 for March amounting to 18,322 bbls. compared with Royalite's No. 4 with 15,979 bbls. Home's No. 1 production included 744 bbls. of crude oil. Royalite's No. 18, with a production of 5,686 bbls. also contributed largely to the month's total.

In general, the naphtha producers maintained their February level, but the light crude oil producers showed some decline. Total production in February was 41,349 bbls., so that the March production represented an increase of 15,352 bbls.

Among the smaller producers, Illinois-Alberta's No. 1 maintained its characteristic steady level. Regent Oil Co.'s No. 1, still unfinished, delivered 500 bbls. and British Dominion's No. 2 bailed 332 bbls. while drilling. United Oils' No. 4, also drilling, flowed nearly 700 bbls.

For the coming month, production figures will be increased by at least two large wells, Okalta's No. 1 which has come back into production and Royalite's No. 14 which has come in and looks like a gusher well. An April production around 75,000 bbls. is quite possible.

#### Deliveries in March

Deliveries from individual wells for March were as follows:

| Well— | Bbls. for month | Dy. ave. |
|---|---|---|
| **IMPERIAL OIL REFINERY, CRUDE NAPHTHA** | | |
| Royalite's No. 4 | 15,979 | 515 |
| Royalite's No. 7 | 2,329 | 75 |
| Royalite's No. 9 | 795 | 26 |
| Royalite's No. 13 | 245 | 8 |
| Royalite's No. 17 | 878 | 28 |
| Royalite's No. 18 | 5,686 | 183 |
| Dalhousie's No. 1* | 630 | 20 |
| Dalhousie's No. 6 | 534 | 17 |
| Home's No. 1 | 17,578 | 557 |
| Illinois-Alberta's No. 1 | 2,079 | 67 |
| Regent's No. 1 (bailing) | 255 | 8 |
| Total | 46,988 | |
| **IMPERIAL REFINERY, CRUDE OIL** | | |
| Royalite's No. 9 | 132 | 4 |
| Royalite's No. 10 | 157 | 5 |
| Royalite's No. 11 | 215 | 7 |
| Royalite's No. 12 | 46 | 2 |
| Royalite's No. 14* | 370 | 12 |
| Royalite's No. 15 | 687 | 22 |
| Royalite's No. 18 | 525 | 17 |
| Royalite's No. 20 | 126 | 4 |
| Dalhousie's No. 5 | 1,208 | 39 |
| Dalhousie's No. 6 | 71 | 2 |
| Foothills' No. 1 | 1,979 | 64 |
| Home's No. 1 | 744 | 24 |
| Home's No. 2 | 109 | 4 |
| Okalta's No. 1 and 2* | 288 | 9 |
| Regent's No. 1* | 226 | 7 |
| British Dominion's No. 2* | 332 | 11 |
| Total | 7,215 | |
| **REGAL REFINERY, CRUDE NAPHTHA** | | |
| Spooner's No. 2 | 627 | 20 |
| Vulcan's No. 1* | 223 | 7 |
| **REGAL REFINERY, CRUDE OIL** | | |
| McLeod wells | 646 | 21 |
| United Oils' No. 4* | 692 | 22 |
| Total | 1,338 | |

Total deliveries, 56,681 bbls., represented a daily average production of approximately 1,828 bbls. for the entire field. The wells marked (*) however were

(Continued on Page 133)

Vapor Columns in any size or capacity, promptly built in our own shops from stock material.

TULSA
Boiler & Machinery Co.
TULSA OKLAHOMA

# California Plans to Start Curtailment

## Present Mutual Arrangement Reached by Operators Contemplates Ultimate Reduction in Production of 145,156 Bbls. Daily

By L. P. Stockman
*Staff Correspondent, California Fields*

LOS ANGELES, Calif., Apr. 13.—Unless something unforeseen develops, California operators will initiate their first mutual reduction in state production some time during the coming week. Umpire van Deinse has not yet set a definite date but this projected curtailment is expected to become a reality in the very near future. The daily average production of February, 1929, which aggregated 793,309 bbls., has been used as a basis for determining the total curtailment necessary to reduce state production to the 1928 average of 648,153 bbls. per day. Present plans contemplate an ultimate reduction in production of 145,156 bbls. per day spread out over every field in the state. This will give California a shut-in production of 272,006 bbls. per day as 126,850 bbls. per day are already curtailed. General Order No. 1, which is being drafted at the present time, will cover every field with the exception of those located in the San Joaquin Valley and result in a curtailment aggregating 129,530 bbls. per day. General Order No. 2, which will be issued as soon as practicable, will cover the San Joaquin Valley fields and result in the shutting in of an additional 15,626 bbls. per day. It was the original intention to initiate this curtailment simultaneously in all fields but the vast amount of detail work has prevented the consumption of this procedure. This is of minor consequence, however, as the projected curtailment involving San Joaquin Valley fields, which will become effective within a few days after the first order, is only a small factor since there are no fields in the ascendancy or registering flush production at the present time.

### Operators Urged to Co-operate

General Order No. 1, now in course of preparation, urges all operators to observe a strict compliance of all rules and regulations in order to conserve the natural resources of the state to the ultimate benefit of both producer and consumer. A new potential will be established for all fields on first and sixteenth of each succeeding month and a ratability will be applied to each individual well. New wells finished during the interim will be permitted to produce to their maximum for a period of 10 days and at the termination of this time an order will be issued giving the well a ratability based on its production for the tenth day. Operators will probably be permitted to produce their wells wide open when establishing their respective potential yield at each bimonthy period. The accompanying table shows the average daily production of February, 1929, and the maximum established for each area under the proposed conservation program, which will go into effect very shortly. The success of California's proposed curtailment depends upon the attitude of individual producers as it is a mutual undertaking and free from any compulsory regulation on the part of civil authorities.

State production just about held even during the past week as the normal decline in flush production was offset by the completion of several good wells during the period in question. The Barnsdall headed the completion list this week by bringing in another substantial producer in the prolific Elwood Field of Santa Barbara County, which this company is developing in conjunction with the Rio Grande. The new well finished in this field a few days ago was No. 4 Bell-Luten which came in under a natural flow doing 4,500 bbls. per day of clean 38.4 gravity oil and 1,300,000 feet of saturated gas from 3,439 feet. This well, the most westerly producer in the Elwood Field, gives the Barnsdall and Rio Grande an aggregate daily production of approximately 31,500 bbls. Production of this field is scheduled to be reduced to 20,000 bbls. per day in conformity with the maximum established under the projected proration scheduled to go into effect within the next few days. In addition to artificially reducing field production, the Barnsdall and Rio Grande have revised their development program and will in the future alternate its drilling operations between the Bell-Luten and Doty leases. Heretofore these companies have been obliged to keep two strings of tools in operation, one on each lease. The next well to be spudded in will be located on the Bell-Luten property but this work will not be started until after the completion of No. 4 Doty, which is nearing completion at the present time.

### Santa Fe Springs Down

Production at Santa Fe Springs registered another decline during the past week due to the fact that only three wells were put on production during the period in question. The inability of operators to shut off water in the lower horizon has retarded the completion of new wells but operators will make up for lost time as soon as this problem has been solved. A number of operators have resorted to the use of ice water in combating the extremely high temperatures encountered, which in many cases exceeds 200 degrees Fahrenheit. The Richfield, after failing to shut off water in No. 2 Elliott after seven recent jobs, used 44 tons of ice to reduce the temperature of formation water and, while this may have accomplished the desired result, this will not be definitely known for another several days. The water problem at Santa Fe Springs has resulted in the holding of several conferences and a number of agencies are already at work on this problem. The three wells finished at Santa Fe Springs during the past week were No. 5 Standlee of The Texas Company, which came in flowing 2,575 bbls. of unusually clean 34.5 gravity oil from the Buckbee zone at 5,887 feet, and Nos. 137-B and 137-C of the General Petroleum, which registered an initial of 1,050 bbls. and 2,760 bbls., respectively. No. 137-C was completed in the Buckbee zone at 5,908 feet while No. 137-B was brought in from the Nordstrum horizon at 5,132 feet. The latter has not yet cleaned up and may require another cement job The 30 wells producing from the intermediate Nordstrum zone during the past week yielded an aggregate of 44,122 bbls. per day, as compared with a total production of 69,781 bbls. from 81 wells producing from the Buckbee zone. The O'Connell horizon yielded 12,050 bbls. per day from five wells during the week. The Foix, Bell and Meyer zones produced approximately 23,750 bbls. per day.

### Kettleman Hills

No definite basis for a suspension of development work and a proration of production had been agreed upon by operators in the prolific Kettleman Hills Field of Kings County up to the present time but operators are confident that this movement will ultimately be successful and prevent this field from precipitating another serious overproduction situation and thus void the statewide movement to restrict production. The General Petroleum has installed three high-pressure gas traps and is treating the entire output from No. 1 Oschner, which blew in a few weeks ago flowing 30,000,000 feet of natural gas per day from 6,850 feet. Several high-pressure pumps have also been installed and an attempt may be made to mud off the present production in order to permit a resumption of work. The effectiveness of this procedure, however, remains to be seen as the casing pressure on the well has been averaging around 1,900 pounds. The Bolsa Chica spudded in No. 1 Ferguson several days ago and a depth of 680 feet had been attained at the close of the week. This well is located approximately 2 miles southeast of the Milham's discovery and about 4 miles northwest of the General Petroleum's No. 2 Oschner. The Bolsa Chica is one of the largest holders of acreage in the Kettleman Hills, controlling a total of 1,840 acres, a substantial part of which is in proven territory.

### Carpenteria

The potentiality of the probable new field opened up by the Continental Oil Co. at Carpenteria has not yet been determined as the company has been unable to open up its No. 1 Franklin for a conclusive test due to the extremely high gas pressure encountered. This well has been given several short preliminary tests but in each case had to be shut in before any oil showed. Two more wells are being started in this immediate area by the Continental and they should be spudded in shortly as derrick construction is already well under way. This potential field gives promise of production in spite of the fact that the discovery well has not shown any crude whatever up to the present. It is quite probable that the Continental's No. 1 Franklin has tapped a gas zone overlying an oil horizon. The picturesque Summerland Field of Santa Barbara County, where shallow production has been derived out in the open ocean for a number of years, has jumped into the spotlight

**PROJECTED CURTAILMENT IN CALIFORNIA PRODUCTION**

| District— | Daily average Feb., 1929 | Quantity to be shut in | New maximum established production |
|---|---|---|---|
| Kern River | 17,714 | 4,214 | 13,500 |
| Mount Poso | 110 | 11 | 99 |
| Fruitvale | 717 | 72 | 645 |
| Round Mountain | 27 | 3 | 24 |
| McKittrick | 4,998 | 500 | 4,498 |
| Midway-Sunset | 70,665 | 7,067 | 63,598 |
| Elk Hills | 18,772 | 1,877 | 16,895 |
| Lost Hills-Belridge | 4,502 | 450 | 4,052 |
| Coalinga | 10,101 | 1,010 | 9,091 |
| Kettleman Hills | 3,451 | 345 | 3,106 |
| Wheeler Ridge | 773 | 77 | 696 |
| Total San Joaquin Valley | 131,830 | 15,626 | 116,204 |
| Watsonville | 62 | 6 | 56 |
| Santa Maria | 5,181 | 518 | 4,663 |
| Summerland | 121 | 12 | 109 |
| Elwood-Goleta | 29,000 | 9,000 | 20,000 |
| Rincon | 3,261 | 326 | 2,935 |
| Ventura Avenue | 55,479 | 4,479 | 51,000 |
| Ventura-Newhall | 5,593 | 559 | 5,034 |
| Los Angeles-Salt Lake | 1,486 | 149 | 1,337 |
| Whittier | 1,578 | 158 | 1,420 |
| Fullerton (Brea Olinda) | 13,294 | 1,329 | 11,965 |
| Coyote | 12,590 | 1,259 | 11,331 |
| Santa Fe Springs | 177,000 | 52,000 | 125,000 |
| Montebello | 11,138 | 1,114 | 10,024 |
| Richfield | 17,437 | 1,744 | 15,693 |
| Huntington Beach | 46,949 | 4,695 | 42,254 |
| Long Beach | 184,000 | 44,000 | 140,000 |
| Torrance | 15,157 | 1,516 | 13,641 |
| Dominguez | 10,855 | 1,085 | 9,770 |
| Rosecrans | 6,834 | 683 | 6,151 |
| Inglewood | 26,089 | 2,609 | 23,480 |
| Newport | 55 | 5 | 50 |
| Seal Beach | 37,000 | 4,000 | 33,000 |
| Potrero | 595 | 59 | 536 |
| Lawndale | 725 | *1,775 | 2,500 |
| Total southern | 661,479 | 129,530 | 531,949 |
| Total state | 793,309 | 145,156 | 648,153 |

*Lawndale shows an increase owing to completion of new well.

**TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS**

| Commodity— | Total this week | Daily average | Total last week | Daily average | This year to date | Same time last year |
|---|---|---|---|---|---|---|
| Crude oil | ..... | ..... | 78,085 | 11,155 | 328,410 | 1,859,261 |
| Fuel oil | ..... | ..... | ..... | ..... | 45,950 | ..... |
| Diesel and gas oil | ..... | ..... | 76,375 | 10,911 | 800,124 | 586,914 |
| Gasoline | 364,212 | 72,030 | 254,589 | 36,379 | 5,611,069 | 3,108,114 |
| Naphtha distillate | ..... | ..... | ..... | ..... | 81,750 | ..... |
| Coastwise— | | | | | | |
| Crude oil | 462,013 | 66,002 | 299,420 | 42,774 | 7,830,367 | 5,304,878 |
| Fuel oil | 754,300 | 107,757 | 273,769 | 39,110 | 6,383,138 | 5,693,809 |
| Diesel and gas oil | 24,455 | 3,494 | 34,837 | 4,977 | 353,222 | 353,752 |
| Gasoline | 176,360 | 25,194 | 182,103 | 26,015 | 3,130,390 | 3,647,581 |
| Kerosene | 1,697 | 242 | 1,602 | 229 | 8,187 | 24,415 |
| Naphtha distillate | ..... | ..... | ..... | ..... | ..... | 171,566 |
| Exports— | | | | | | |
| Crude oil | 203,542 | 29,074 | 54,694 | 7,813 | 1,393,383 | 673,326 |
| Fuel oil | 268,120 | 38,303 | 229,436 | 32,777 | 4,927,028 | 7,713,682 |
| Diesel and gas oil | 21,595 | 3,085 | 7,368 | 1,053 | 669,547 | 875,348 |
| Gasoline | 165,007 | 23,572 | 229,885 | 32,841 | 2,607,459 | 1,466,148 |
| Kerosene | ..... | ..... | 198,565 | 28,366 | 795,776 | 1,529,919 |

**TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS**

| | | | | | | |
|---|---|---|---|---|---|---|
| Diesel and gas oil | ..... | ..... | ..... | ..... | ..... | 342,425 |
| Gasoline | 80,362 | 11,480 | ..... | ..... | 848,607 | 638,737 |
| Lubricants | ..... | ..... | ..... | ..... | ..... | 138,769 |
| Coastwise— | | | | | | |
| Fuel oil | 95,980 | 13,711 | ..... | ..... | 848,534 | 1,097,007 |
| Diesel and gas oil | 1,498 | 214 | ..... | ..... | 184,222 | 98,436 |
| Gasoline | 181,801 | 25,972 | 56,193 | 8,028 | 1,033,212 | 995,882 |
| Kerosene | 7,443 | 1,063 | ..... | ..... | 37,135 | 73,223 |
| Exports— | | | | | | |
| Crude oil | ..... | ..... | ..... | ..... | 71,453 | 51,870 |
| Fuel oil | ..... | ..... | 72,825 | 10,404 | 241,671 | 654,852 |
| Diesel and gas oil | ..... | ..... | ..... | ..... | 64,338 | 10,400 |
| Gasoline | ..... | ..... | 93,685 | 13,384 | 1,624,618 | 1,274,512 |
| Kerosene | ..... | ..... | ..... | ..... | 103,838 | 307,089 |
| Lubricants | ..... | ..... | ..... | ..... | 13,693 | ..... |

almost over night due to the activities of George F. Getty, Shell Oil Co., Lincoln Drilling Co. and others. The Shell will be making hole in a new well in this area within the next two weeks as location was staked a few days ago for a deep test on the Ralph permit. Getty has already started work on the old Becker well which was carried down and suspended several months ago at 3,098 feet. This area will bear watching as it has possibilities and may result in the development of substantial production.

### Long Beach

Although extreme difficulty is being experienced by Santa Fe Springs' operators in shutting off water in the deep zones because of the extreme temperature encountered, approximating in many instances in excess of 200 degrees Fahrenheit, the Long Beach Field continues to yield its usual weekly quota of new wells. Several satisfactory completions were listed at Long Beach during the past seven-day period and a check indicates some five or six more on the verge of being brought in. E. L. Doheny started off the week by finishing No. 2 Nelson flowing 2,300 bbls. of 28.2 gravity oil and approximately 2,000,000 feet of wet gas daily from 7,112 feet, the hole having been completed with a 6⅝-inch perforated liner. This well, the second to be completed on the Nelson lease within the past few weeks, is located on the extreme southern edge of the field and is producing from 915 feet of formation. The large penetration secured in this producer is exceptionally interesting because of its position on the structure. Both wells on this lease, incidentally, show edgewater encroachment, the water content being around 6 per cent.

The Macmillan Petroleum Corp., which has experienced considerable success in its development work at Long Beach, increased its daily production 1,040 bbls. of clean 28.6 gravity oil daily as a result of the completion of No. 2 Ifland, a new well which was brought in under a natural flow a few days ago from 5,880 feet. A 4¾-inch liner carrying 304 feet of perforated was used in the completion of this new producer. In addition to the crude oil produced, No. 2 Ifland is yielding 3,300,000 feet of wet gas which has a theoretical natural gasoline content of a little better than 2 gallons for each 1,000 feet of natural gas treated. No. 2 Wellman, which the Macmillan Petroleum finished about 10 days ago doing 1,405 bbls. from the shallow zone at 4,531 feet, is still holding up in good shape, the current output being 1,290 bbls. of clean pipe line oil daily. The Shell put two wells on production during the past week but neither of them was of any unusual importance. No. 8 Nicholson proved a distinct disappointment upon completion as it only showed an initial of 216 bbls. daily from an even 7,000 feet. This well, which is producing from 1,570 feet of almost continuous oil sand, was finished with a 5¾-inch oil string cemented through perforations at 5,413 feet. No. 8 Goddard, another deep zone completion which was bottomed at 7,000 feet, was also a disappointment as it only showed an initial daily production of 330 bbls., the output cutting approximately 30 per cent water. The Shell had anticipated the completion of No. 7 Nicholson, another new well, during the past week but it failed to show sufficient kick to result in a natural flow from 7,894 feet and will require further work.

The Richfield Oil Co. recorded the largest completion finished in the Long Beach Field for several weeks when No. 2 Meader was brought in under a natural flow a few days ago doing 2,592 bbls. of clean 29.8 gravity oil and 2,100,000 feet of saturated gas daily. This new producer, which was carried down to 7,021 feet and finished with a 5¾-inch oil string cemented through perforations at 6,186 feet, will probably experience a relatively long life considering the present partially depleted condition of this area as it has a penetration in the oil-bearing formation of 1,840 feet. No. 1 Meader, which was finished last August doing 6,574 bbls. per day from 6,748 feet, is still yielding 2,140 bbls. of clean pipe line oil every 24 hours. The Union also chalked up a new well this week when No. 22 Long Beach Community came in under a natural flow doing 2,250 bbls. per day from 6,650 feet, the hole having been finished with a 6⅝-inch oil string carrying 819 feet of perforated.

The Richfield is nearing the end of a very successful development campaign at Long Beach and the efforts of its production department will in the future be directed to the rejuvenation of producing wells which have failed to maintain consistent settled production. Stephens & Hardy recompleted their No. 35 Signal Hill, a former upper-zone producer, after redrilling and deepening it to the lower horizon, and this well, which was returned to production flowing 721 bbls. of clean 29.6 gravity oil daily from 7,060 feet, was finished with a 4¾-inch liner, carrying 879 feet of perforated. The South Basin's No. 1 Nakamura, another former upper-zone producer, has been recompleted doing 205 bbls. daily from 6,159 feet. The output of this well, however, was distinctly disappointing as it had a penetration in the oil sand of 772 feet and gave evidence of resulting in favorable production.

The Shell Oil Co., discoverer of the Long Beach Field, headed the production list at the close of the past week with a daily production of 48,400 bbls., followed by the Richfield with 27,000 bbls. and The Texas Company with 12,750 bbls. Dabney & Johnson have a current daily output of 8,000 bbls., General Petroleum 4,000 bbls., and the Union 3,500 bbls. Dabney & Johnson and the Union should each finish a new well within the next few days.

### Huntington Beach

Drilling operations in the Huntington Beach Field have shown a slight increase during the past few weeks due to the spudding in of several new wells during this period. With the exception of the Standard Oil Co.'s major holdings, Huntington Beach is practically developed to the maximum with the result that only a limited amount of drilling is under way. For a long time only three or four strings of tools were in operation but with projected deep-zone exploration taking definite form and the recent spudding in of several new wells there are now 11 drilling projects under way. The development of substantial production at Long Beach and Santa Fe Springs has temporarily diverted attention away from Huntington Beach for the past year or two but the latter district is coming into the limelight again with three or four projected deep-zone exploratory wells scheduled to get under way within the next week or 10 days. The American Oil Producers, West Coast Petroleum and the Rex Oil Co. are each rigging up a new well for deep-zone exploration and spud should be made shortly. The Richfield Oil Co.'s No. 1 Bardeen, which was spudded in two weeks ago, will probably also be carried down in search of deeper production. The present status of this well is almost conclusive evidence that deep-zone exploration is contemplated as an unusually large hole was started. The surface string landed in this project several days ago consisted of 778 feet of 18-inch.

The geological fraternity is somewhat divided regarding the possibility of opening up another horizon below present producing zones, although it might be mentioned that the greater majority of geologists and petroleum engineers believe the bottom of production has already been reached at Huntington Beach. This is a debatable issue, however, as subsurface conditions in this field are very irregular and might require the drilling of several more wells in order to test out each geological block. The entire area is broken up by numerous faults and cross faults resulting in a very pronounced unconformity which in many cases precludes satisfactory correlation work. The core barrel was still in its infancy and had not reached any degree of perfection during the period of maximum development at Huntington Beach with the result that a large part of the present knowledge of subsurface conditions has been determined during recent years. The opinion of many that a new deep oil sand should be encountered around the 5,300-foot level appears quite plausible from limited subsurface correlation, although this can only be definitely determined by the drill. The majority of wells in the older section of the field are producing from the lower Ashton zone, which is encountered around the 4,150-foot level and contains a maximum thickness of approximately 650 feet. The upper Ashton is topped around 3,300 feet and the middle Ashton around 3,700 feet.

The Rex Oil Co., which will drill one of the trio of projected deep-zone exploratory wells at Huntington Beach, completed its No. 10 during the early part of April and although this well has failed to clean up at the expiration of the provisional production test it will not be disturbed for the present as the water separates quite readily. This well is pumping 210 bbls. daily from 4,850 feet but the output is still cutting 15 per cent water. The Western Drilling & Production Co., a subsidiary of the Western Oil & Refining Co., finished its No. 25 Huntington along about the same time

(Continued on Page 129)

### IMPORTANT NORTHERN CALIFORNIA WILDCATS

| Company, well, location— | S-T-R | Depth | Status |
|---|---|---|---|
| Standard, No. 5-9, Saticoy, Ventura Co. | 10- 2-22 | 5,520 | hd. sd. drilling |
| Federal Oil Co., No. 1 Elkins, Ventura Co. | 5- 3-19 | 3,410 | sd. sh. drilling |
| American Oil Co., No. 1 Camarillo, Ventura Co. | 33- 2-20 | 1,031 | hd. sd. drilling |
| Bolsa Chica, No. 1 Temescal, Ventura Co. | 4- 4-18 | 769 | suspended |
| The Texas Company, No. 1 Hueneme, Ventura Co. | Lot 82 | 1,329 | hd. sd. drilling |
| The Texas Company, No. 1 Wiley Canyon, Ventura Co. | 2- 3-19 | 532 | gr. sd. drilling |
| Superior Oil Co., No. 1 Santa Paula, Ventura Co. | 14- 4-21 | ..... | location |
| Craise, F. A., No. 1 South Mountain, Ventura Co. | 17- 3-21 | Rig | rigging up |
| Miley, E. J., No. 2 Casitas, Ventura Co. | 7- 3-23 | 965 | rd. sd. drilling |
| Shell, No. 1 Simi, Ventura Co. | 31- 3-17 | 2,640 | hd. sd. drilling |
| Continental, No. 1 Sulphur Mountain, Ventura Co. | 21- 4-22 | 3,765 | suspended |
| Continental, No. 2 Sulphur Mountain, Ventura Co. | 22- 4-22 | 6,640 | sd. sh. drilling |
| Milham Explt'n., No. 1-A Buttonwillow, Kern Co. | 8-28-23 | 4,662 | gas well, idle |
| Milham Explt'n., No. 2 Buttonwillow, Kern Co. | 8-28-23 | 2,730 | gas well, idle |
| Milham Explt'n., No. 3 Buttonwillow, Kern Co. | 8-28-23 | 2,694 | gas well, idle |
| Milham Explt'n., No. 4 Buttonwillow, Kern Co. | 6-28-23 | 2,670 | gas well, idle |
| Milham Explt'n., No. 5 Buttonwillow, Kern Co. | 5-28-23 | 2,500 | gas well, idle |
| Milham Explt'n., No. 6 Buttonwillow, Kern Co. | 8-28-23 | 2,676 | gas well, idle |
| Milham Explt'n., No. 7 Buttonwillow, Kern Co. | 6-28-23 | 2,720 | suspended |
| Milham Explt'n., No. 8-A Buttonwillow, Kern Co. | 8-28-23 | 2,673 | gas well, idle |
| Doheny-Stone, No. 1 Salisbury, Kern Co. | 7-29-24 | 4,750 | fishing |
| South. Calif. Gas Co., No. 1 Buttonwillow, Kern Co. | 4-28-23 | 4,272 | suspended |
| South. Calif. Gas Co., No. 2 Buttonwillow, Kern Co. | 27-28-23 | Rig | suspended |
| Lincoln Drlg. Co., No. 1 Buttonwillow, Kern Co. | 6-28-23 | 190 | suspended |
| Richfield Oil Co., No. 1 Semitropic, Kern Co. | 21-26-22 | 5,207 | abandoning |
| Richfield Oil Co., No. 2 Semitropic, Kern Co. | 36-27-23 | 4,412 | br. sh. drilling |
| Western Gulf, No. 1 Union Ave., Kern Co. | 6-30-28 | 5,640 | suspended |
| Western Gulf, No. 2 Union Ave., Kern Co. | 6-30-28 | 4,500 | suspended |
| Western Gulf, No. 3 Union Ave., Kern Co. | 6-30-28 | 4,443 | suspended |
| Western Gulf, No. 5 Union Ave., Kern Co. | 5-30-28 | 4,991 | suspended |
| Stabler, W. W., No. 1 Comanche Point, Kern Co. | 23-32-29 | 3,409 | suspended |
| Symark Oil Co., No. 1 Edison, Kern Co. | 24-29-29 | 1,230 | rigging rotary |
| Midway Northern, No. 1 Edison, Kern Co. | 29-29-30 | 3,841 | suspended |
| Elmer Oil Co., No. 1 Shafter, Kern Co. | 8-28-25 | 6,100 | cleaning out |
| Elmer Oil Co., No. 1 Bena, Kern Co. | 15-30-30 | 1,400 | sd. sh. drilling |
| Elmer Oil Co., No. 1 Rosedale, Kern Co. | 33-29-26 | 2,160 | sd. sh. drilling |
| Shell Oil Co., No. 1 Lerdo, Kern Co. | 5-29-27 | 229 | hd. sd. drilling |
| General Pet., No. 1 McFarland, Kern Co. | 25-26-25 | 714 | hd. sd. drilling |
| Union, No. 2 San Emidio, Kern Co. | 5-10-21 | 2,541 | hd. sd. drilling |
| Currency Pet. Co., No. 1 Vineyard, Fresno Co. | 28-21-14 | 1,671 | gr. sd. drilling |
| Currency Pet. Co., No. 2 Vineyard, Fresno Co. | 14-21-14 | 229 | sd. drilling |
| Hornaday & Huggins, No. 1 Kerman, Fresno Co. | 32-14-18 | 2,763 | sd. sh. drilling |
| K. C. L. Oil Co., No. 1 Joaquin Ridge, Fresno Co. | 7-19-15 | 114 | suspended |
| Thomas Pet. Co., No. 1 Krayenhagen, Fresno Co. | 33-22-17 | 568 | suspended |
| Union, No. 1 Huasna, San Luis Obispo Co. | 34-32-15 | 3,450 | br. sh. drilling |
| Union, No. 1 North Huasna, San Luis Obispo Co. | 12-32-14 | 2,971 | hd. sd. drilling |
| Panorama Oil Co., Well No. 1, San Luis Obispo Co. | 7-31-21 | 3,501 | hd. sd. drilling |
| Shell, No. 2 Guadalupe, Santa Barbara Co. | 36-10-35 | 1,062 | sd. sh. drilling |
| Shell, No. 1 Guadalupe, Santa Barbara Co. | 25-10-35 | 2,930 | sd. sh. drilling |
| Shell, No. 2 Goleta, Santa Barbara Co. | 36- 5-31 | 2,980 | hd. sd. drilling |
| Union, No. 1 Buel Canyon, Santa Barbara Co. | X- 7-31 | Mtl. | building rig |
| Standard, No. 1 Point Conception, Santa Barbara Co. | X- 5-34 | 1,914 | sd. sh. drilling |
| Standard, No. 1 Tortuga Canyon, Santa Barbara Co. | ..... | 2,083 | sd. sh. drilling |
| Olympic Oil & Refg Co., No. 1 Mesa, Santa Barbara Co. | X- 7-28 | 2,456 | suspended |
| Bankline Oil Co., No. 1 Mesa, Santa Barbara Co. | X- 4-27 | 4,091 | Sespe, drilling |
| Exeter Oil Co., No. 1 Mesa, Santa Barbara Co. | X- 4-27 | 3,082 | Sespe, drilling |
| American Oil Co., No. 1 Summerland, Santa Barbara Co. | X- 4-26 | 586 | sd. sh. drilling |
| Shell, No. 1 Summerland, Santa Barbara Co. | 18- 4-25 | ..... | location |
| Nevada Standard, No. 1 Goleta, Santa Barbara Co. | 10- 4-28 | 3,012 | sd. sh. drilling |
| General Pet., No. 1 Elwood, Santa Barbara Co. | 21- 4-28 | 612 | sd. sh. drilling |
| Padre Oil Co., No. 1 Dos Pueblos, Santa Barbara Co. | 18- 4-27 | 2,192 | sd. sh. drilling |
| System Oil Co., No. 1 Orcutt, Santa Barbara Co. | 36-10-34 | 246 | suspended |
| Getty, Geo. F., No. 1 Summerland, Santa Barbara Co. | 33- 4-25 | 3,090 | cleaning out |
| Channel Oil Co., Well No. 1, Santa Barbara Co. | 29- 4-27 | 6,304 | recemented |
| Channel Oil Co., No. 1 Fellowship, Santa Barbara Co. | 29- 4-27 | 629 | br. sh. drilling |
| Continental, No. 1 Carpenteria, Santa Barbara Co. | 33- 4-25 | 4,130 | heavy gas |
| Continental, No. 2 Carpenteria, Santa Barbara Co. | 33- 4-25 | Mtl. | building rig |
| Continental, No. 3 Carpenteria, Santa Barbara Co. | 33- 4-25 | Mtl. | building rig |
| Elwood Consd., No. 1 Goleta, Santa Barbara Co. | 8- 4-29 | 3,310 | recemented |
| Colusa Oil Co., Well No. 1, Colusa Co. | 31-15- 4 | 380 | redrilling |
| Nuna Oil Co., Well No. 1, Colusa Co. | 19- 15- 5 | 400 | suspended |
| North Counties Oil Co., Well No. 2, Humboldt Co. | 36- 2- 1 | 2,205 | suspended |
| Humboldt Oil Co., Well No. 1, Humboldt Co. | 6- 2- 1 | 3,041 | redrilling |
| Applegate & Renshaw, Well No. 1, Merced Co. | 24- 6-10 | 3,693 | bl. sh. drilling |
| Kuhns, H. L., Well No. 1 Merced Co. | 8-12-19 | 345 | sd. drilling |
| Calhoma Oil Co., No. 1 Livermore, Alameda Co. | 9- 3- 3 | 1,544 | cleaning out |
| Foster & Hammill, Well No. 1, Alameda Co. | 21- 3- 3 | 465 | suspended |
| R. Y. Hanlyn, Well No. 1, Alameda Co. | 3- 5- 2 | 360 | suspended |
| Shell, No. 1 Dudley, Monterey Co. | 15-22- 9 | 1,803 | hd. sd. drilling |
| Union, No. 1 San Lucas, Monterey Co. | 8-22- 8 | Mtl. | building rig |
| Brown Oil Co., No. 1 Parkfield, Monterey Co. | ..... | ..... | grading |
| Marland, No. 1 Bradley, Monterey Co. | 32-24-11 | 4,863 | cemented |
| Dudley Ridge Synd., No. 1 Tulare, Kings Co. | 12-23-19 | 1,450 | cleaning out |

### IMPORTANT SOUTHERN CALIFORNIA WILDCATS

| | | | |
|---|---|---|---|
| Ring Pet. Co., No. 1 Inglewood, Los Angeles Co. | 28- 2-14 | 5,487 | suspended |
| Ohio Oil Co., No. 1 Playa Del Rey, Los Angeles Co. | 22- 2-15 | 1,918 | hd. sd. drilling |
| Petroleum Securities, No. 1 Hermosa, Los Angeles Co. | 32- 3-14 | 3,940 | testing |
| Western Drlg. Co., No. 1 Manhattan, Los Angeles Co. | 30- 3-14 | 4,740 | sd. sh. drilling |
| Standard, No. 1 Hawthorne, Los Angeles Co. | 5- 3-14 | 101 | sd. drilling |
| Allied Pet., No. 1 Redondo, Los Angeles Co. | 28- 3-14 | 50 | sd. drilling |
| Mont. Park Pet. Co., No. 1 Jepson, Monterey Park | 25- 1-12 | 3,937 | suspended |
| Rio Grande, No. 1 Downey, Los Angeles Co. | 34- 2-12 | 5,070 | gr. sd. drilling |
| Jackson, R. W., No. 1 Whittier, Los Angeles Co. | 19- 2-11 | 742 | hd. sd. drilling |
| Burlingham Pet. Co., No. 1 Compton, Los Angeles Co. | 17- 3-13 | 494 | suspended |
| Easton & Smith, No. 1 Calabasas, Los Angeles Co. | 19- 1-17 | 2,982 | suspended |
| Pugh Miller Drlg. Co., No. 1 Calabasas, Los Angeles Co. | 6- 1-17 | 512 | sd. drilling |
| Russell Oil Co., No. 2 Joughin, Los Angeles Co. | 25- 3-17 | 1,550 | cleaning out |
| Pomona Oil Co., Well No. 1, Los Angeles Co. | 32- 1- 8 | 1,106 | hd. sd. drilling |
| Anchor Oil Co., No. 1 Puente, Los Angeles Co. | 19- 2-10 | 4,820 | suspended |
| Richfield Oil Co., No. 1 Puente, Los Angeles Co. | 9- 2-10 | 4,211 | sd. sh. drilling |
| Union Oil Co., No. 1 Richfield, Los Angeles Co. | 13- 3- 9 | Rig | rigging up |
| Southwestern Dev. Co., No. 1 Richfield, Los Angeles Co. | 21- 3- 9 | 2,512 | sd. sh. drilling |
| Anderson, P. B., No. 1 Hasley Canyon, Los Angeles Co. | 1- 3-16 | ..... | location |
| Pico Dome, No. 1 Hasley Canyon, Los Angeles Co. | 14- 3-16 | 225 | sd. drilling |
| Calif. Eastern, No. 1 Wickham, Los Angeles Co. | 32- 5-17 | 3,517 | suspended |
| Coastline Oil Co., No. 1 Devil Canyon, Los Angeles Co. | 21- 5-17 | 514 | cleaning out |
| Mesa Pet., No. 1 Newport, Orange Co. | 21- 6-10 | 3,930 | br. sh. drilling |
| West. Drlg. & Prod. Co., No. 1 Newport, Orange Co. | 18- 6-10 | 4,461 | suspended |
| West. Drlg. & Prod. Co., No. 2 Newport, Orange Co. | 18- 6-10 | 1,306 | sd. sh. drilling |
| Travis Drlg. Co., No. 1 Buena Park, Orange Co. | 36- 3-11 | Mtl. | building rig |
| Hall Pet. Co., No. 1 Murrietta, Riverside Co. | 23- 7- 3 | 976 | cleaning out |
| Hemet Pet. Co., No. 1 Ward, Riverside Co. | 9- 5- 1 | 3,232 | suspended |
| Imperial Valley Oil Co., Well No. 1, Riverside Co. | 32-11-10 | 2,670 | sd. sh. drilling |
| Davenport O. & G. Co., No. 1 San Marcos, San Diego Co. | 30-12- 8 | 847 | suspended |
| Turner, S. S., No. 1 Escondido, San Diego Co. | 25-12- 2 | 1,845 | bl. sd. drilling |

# Better Than Average Wells in the East

## Fewer Completions and No Large Producers During the Week. Prospects for Revival of Drilling Are Quite Promising

By D. S. Wakenight
*Staff Correspondent, Eastern Fields*

PITTSBURGH, Pa., Apr. 15.—The eastern fields completed fewer wells and no very large producers. However, there were more than the usual number of completions better than the average. All are located in the deep and shallow sand territory in southeast Ohio. With a few exceptions West Virginia and southeast Pennsylvania completed light

pumpers. Spring weather prevailed throughout the week and if it continues will be an incentive for operators to get busy. The oil well supply houses say that inquiries for drilling material are coming in and the prospects for a revival in the East quite promising.

There is no longer any doubt as to the ability of the eastern fields to meet the demand for crude of the Pennsylvania grade. The shortage last year was far below the requirements and will no doubt be greater this year for it is increasing. At this time none of the refineries or dealers has on hand a large stock of gasoline and lubricants in storage. During the winter the consumption was unusually large. The firmness of the market is an encouraging feature. As now quoted, operators can afford to drill for light pumpers.

### Good and Fair Producers

In the NW Section 8, Harrison township, Perry County, the Pure Oil Co. completed and shot in the Clinton sand second test on the Julia D. Turner farm. It had an initial production of 75 bbls. In Section 34, Coal Township, the Hope Construction & Refining Co. completed No. 4 on the Edward L. McKane farm. It produced 57 bbls. the first 24 hours. In Section 28, same township, the Chartiers Oil Co. completed No. 210 on the Hocking Valley Products property and got a 40-bbl. producer.

In the NE Section 25, Washington township, Hocking County, the Gordon Oil Co.'s No. 4 on the Charles J. Meldrim farm is a 35-bbl. producer. In Section 4, same township, the same company has a 38-bbl. producer at No. 9 on the William Stone farm.

In the NW Section 8, Fallsbury Township, Licking County, the Emerald Petroleum Co. got an 80-bbl. producer on the Jacob Weiss farm. In Section 10, Hopewell Township, the Hope Construction & Refining Co. completed and shot second test on the Noah A. Coomes farm. It produced 70 bbls. the first 24 hours. In Section 1, same township, the Pure Oil Co.'s second test on the A. R. Loughman farm is a 30-bbl. producer.

In Section 28, York Township, Morgan County, the Hopewell Fuel & Gas Co. completed in the Clinton sand a test on the B. F. Tharp farm. It produced 80 bbls. the first 24 hours. In Section 6, Jackson Township, Muskingum County, the Hope Construction & Refining Co. completed No. 5 on the W. E. Humphrey farm. It produced 75 bbls. the first 24 hours.

### Good Shallow Sand Well

In Section 28, Bethel Township, Monroe County, the Sylvania Producing Co. got better than an average shallow sand producer when it drilled through the Squaw sand No. 5 on the Lughburgh heirs farm. It produced 50 bbls. the first 24 hours.

In Section 15, Perry Township, Muskingum County, the Prymiller Oil Co.'s second test on the W. M. Knight farm is a duster in the Clinton sand. In Section 10, same township, Saunders and others had the same luck on the William Bateman farm.

In Section 33, Independence Township, Washington County, C. W. Schramm and others completed a second test on the Harry Feller farm. It is a 3-bbl. pumper in the second Cow Run sand. In the SW Section 9, Harrison Township, Perry County, Bell, Scholl and others completed a test on the J. W. Brumage farm. It was a duster in the Clinton sand at a total depth of 3,510 feet.

### Drilling and Starting Tests

In Section 5, Harrison Township, Perry County, the Ohio Fuel Gas Co. has a rig up on the Mrs. Charles Downey farm. In Section 20, David Melick, trustee, has a rig up on the Curley Straight lot. In Section 8, the Northern Development Co. has a rig up on the T. A. Wilson farm. Guthrie & McIntire have the rig completed on the A. Cannon farm. In Section 4, Harrison Township, Crowley, Carr and others have started to drill on the J. O. Guy farm. In Clay Township, Muskingum County, Luther, Denman and others are drilling on the Thomas Combs & Co.'s farm. In the same township, the Union Gas Co. has a rig up on the W. A. Grant farm. In Harrison Township, Perry County, the Ohio Fuel Gas Co. is due in the Clinton sand on the Mary Watts farm.

In the NE Section 28, Coal Township, Perry County, the Chartiers Oil Co. completed and shot in the Clinton sand No. 210 on the Hocking Valley Products Co.'s property. It produced 40 bbls. the first 24 hours.

### Light Pumper in Perry, Duster in Wayne

In the NE Section 28, Harrison Township, Perry County, the Leonard Oil & Gas Co. and others completed in the Clinton sand a second test on the J. H. Driggs farm, showing for a 5-bbl. pumper. In the NW of Lot 2, Congress Township, Wayne County, J. M. Williamson & Co.'s No. 3 on the Lois and C. B. Esselburn farm is a duster in the shallow sand.

In Section 21, Harrison Township, William Cline & Co. have a 5-bbl. pumper in the Clinton sand at No. 6 on the Burley-Winter farm.

In Sudsbury Township, Monroe County, C. W. Paine and others are drilling on the E. A. and L. H. Dean farm. In Section 5, Jackson Township, Perry County, Perry Sturm and others have a rig up on the Margaret M. Griggs farm. In Section 12, Reading Township, the Preston Oil Co. is drilling on the L. C. Bowman farm. In Rush Creek Township, Fairfield County, Murl Myers has a rig up for a deep test on the J. J. Johnston farm.

### WEST VIRGINIA

In Jefferson district, Pleasants County, Dinemoor & Co. have completed in the Cow Run sand No. 5 on the A. Hentzelman farm. It is a duster. In Duval district, Lincoln County, the Downey Gas Co. has a gasser in the Berea grit on the Ned Davis farm. In Jefferson district the Russell Gas Co. has a gasser in the same formation at No. 4 on the James Cooper farm. In the same district, the David Gas Co. has a gasser on the Juda Britton farm.

In Henry district, Clay County, the Virginian Gasoline & Oil Co. completed in the Big Injun sand No. 6, on the James Reed farm, good for 30 bbls. a day. In the same district and county, the company has completed and shot in the same formation No. 17 on the Brown, Swan, Goshorn & Geary tract. It is estimated good for 20 bbls. a day.

### Jackson County

In Ravenwood district, Jackson County, the South Penn Oil Co. has completed and shot in the Berea grit No. 4 on the C. S. McCarty farm. It is a 10-bbl. pumper. On Triplett Run, Spencer district, Roane County, the Hope Construction & Refining Co. has a light gasser at a second test on the Craig-Bartlett farm.

On Elk fork of Cobbs Creek, Washington district, Lincoln County, the Harvard Gas Co. has completed a test on the Standard Fuel Gas Co.'s property. It is a fair gasser, with no show of oil. In Liberty district, Marshall County, the Carnegie Natural Gas Co.'s No. 7 on the T. D. Conaway farm is dry in all sands.

### Deep Gassers in Lewis County

In Hackers Creek district, Lewis County, the Standard Gas Co. drilled a test on the W. Dennison farm through the Benson sand to a total depth of 4,205 feet. It is a fair gasser. In the same district, Angler & Potter drilled a second test on the Wade Bennett farm through the same formation to a total depth of 4,155 feet and got a similar gasser.

In DeKalb district, Gilmer County, the South Penn Oil Co. completed in the Maxon sand No. 4 on the R. J. Ellis farm. It flowed 40 bbls. the first 24 hours. The initial production of this well is larger than any completed in Gilmer County in many months.

In Grant district, Pleasants County, E. F. Russell and others have completed a duster in the Mitchell sand on the H. S. Russell farm. In DeKalb district, Gilmer County, the Hope Construction & Refining Co. shot and cleaned out No. 8 on the R. L. Weaver farm, increasing its production from 1 to 4 bbls. a day.

### Lincoln County

In Carroll district, Lincoln County, the United Fuel Gas Co. completed in the Big Injun sand No. 2,595 on the Emily Bias farm. It is a gasser. In Jefferson district, same county, Earl Cameron's No. 3 on the J. A. Stone farm is a gasser in the same formation.

In Geary district, Roane County, the Hollywood Oil & Gas Co. has a gasser in the Salt sand on the T. F. Smith farm. In Spencer district, same county, the Hope Natural Gas Co. has a gasser in the Big Injun sand at No. 7,232 on the W. T. Craig farm. In Otter district, Braxton County, the Union Oil & Gas Co. has completed in the Big Injun sand a duster on the M. J. Perkins farm.

On the right fork of Camp Creek, Stonewall district, Wayne County, West Virginia, 2,500 feet west of Meabon & Huffman's test on the Wayne Osborne farm, the United Fuel Gas Co. has completed and shot in the Big Injun sand No. 2,556 on the Lincoln Land Association Co.'s tract. It is a light gasser. The United Fuel Gas Co. completed in the same formation No. 2,558 on the same tract. It is also a light gasser in the same formation.

### Shooting Increases Production

In De Kalb district, Gilmer County, the South Penn Oil Co.'s No. 6 on the Lafayette Harden farm had dropped to less than 1 bbl. a day and was given a shot, increasing its production to 6 bbls. In the same district, the same company shot and cleaned out its No. 2 on the B. F. Weaver farm. Its production was increased to 6 bbls. a day.

On Matthews Run, Paw Paw district, Marion County, the Owens Bottle & Machine Co. has drilled its test on the

(Continued on Page 123)

## TWO WELLS IN BARTLETT POOL BEST OF WEEK IN KENTUCKY

By Whit

OWENSBORO, Ky., Apr. 15.—The Bartlett Pool near Taffy, in Ohio County, comes to the front with two best wells in Kentucky for the week, each doing around 150 bbls. while in Daviess County a 100-bbl. producer was uncovered.

A summary of the week's work in the Kentucky fields shows 16 completions, 9 producers with an initial production of 506 bbls., 5 dry holes and 2 gas wells.

| County— | Comp. | Oil wells | Prod. | Dry | Gas |
|---|---|---|---|---|---|
| Ohio | 8 | 6 | 365 | 2 | 0 |
| Daviess | 5 | 2 | 140 | 3 | 0 |
| Allen | 1 | 1 | 1 | 0 | 0 |
| Hancock | 1 | 0 | 0 | 0 | 1 |
| Pike | 1 | 0 | 0 | 0 | 1 |
| Total | 16 | 9 | 506 | 5 | 2 |

Only one completion was reported from eastern Kentucky and that was in Pike County, drilled by unknown parties on Buckley Creek, about 3 miles from Pikeville, which found a very nice gas well at a depth reported at 2,600 feet and more than half a mile from a well drilled some time ago. It looks like the opening of a new gas producing area.

In Clay County, the Petroleum Exploration Co. is drilling two wells for gas. They are No. 1 on the George W. Brewer and No. 1 on the J. T. Johnson lease. Same company is drilling on the Scott heirs farm, in Owsley County, and made a location on the J. T. Lewis farm, in the gas producing area of Morgan County.

### Ohio County Wells

Southwest of Taffy, in the Bartlett Pool, in Ohio County, Hupp and Duff's No. 4 on the Ellis Bartlett 54 acres, is reported good for around 150 bbls. initial production, while the same firm's No. 4 on the L. Trodgen farm, adjoining the Bartlett lease, is equally good, if not a trifle larger. This is at present the richest pool in the county, and a large number of wells will be drilled in the new area as soon as the tools and supplies can be hauled to the locations. This pool is to the southwest of the once rich Ambrose-Weller Pool that brought about the large development in the northern part of the county and brought the western part of the State into prominence as a producer of much crude oil.

The Wood Oil Co.'s No. 9 on the J. C. Smith farm, of 151 acres, in the Sunnydale Field, produced an initial of 30 bbls. from a total depth of 462 feet. In this well a string of 442 feet of casing was set and the sand found from 445 to 457 feet and shot with 30 quarts. Same company's No. 4 on the V. R. Ferguson 60 acres, in the same field, came in a dry hole at 465 feet.

Smith and Fisher's second well on the J. W. Thomas 22 acres, in the Dundee area, produced 15 bbls. initial from a total depth of 409 feet after given a 60-quart shot. A string of 323 feet of casing was set in this well and the sand found from 386 to 404 feet.

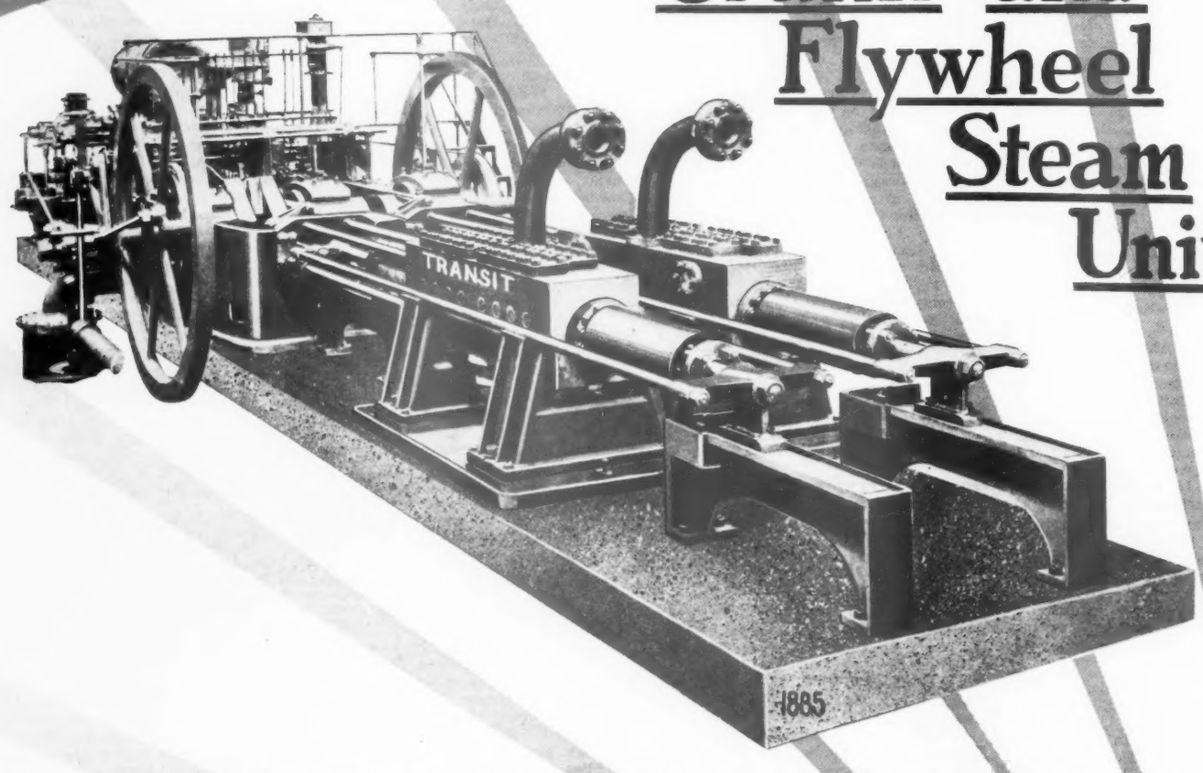
Snowden-McSweeney Co.'s No. 2 on the Everette Maden 211 acres, in the Sunnydale Field, is reported a duster.

James C. Ellis drilled in No. 13 on the Jane Daniels farm, in the eastern

(Continued on Page 123)

# An Outstanding H

## Crank and Flywheel Steam Unit




**ECONOMY** —The crank and flywheel steam end is by far the most economical in the use of steam; and coupled with this you have the extraordinary reliability, flexibility and safety of steam power -- three very important considerations in the handling of dangerously hot oil. Every refiner knows that this is so.

**FLEXIBILITY** —There is no industry where the manufacturing conditions are changing so rapidly as in oil refining. This requires the utmost flexibility in your pumping equipment.

If the refiner is to keep financially healthy he must be in position to meet these changing conditions. This means flexible equipment. No type of pumping equipment is so flexible as a steam pump. We have reference, of course to TRANSIT Steam Pumps.

**UNIFORM FLOW**—On this type of pump, the throws on the crankshaft are 90° apart. When one plunger is nearing the end of its stroke (and therefore traveling very slowly) the plunger on the opposite side is at the center of its stroke and traveling at its highest speed. Thus, both the speed and pressure of the oil in the common discharge line are kept very constant. Speed and pressure, thus controlled, in turn, exert a strong influence on maintaining an even temperature of the hot oil as it leaves the tubes.

# Hot Oil Pump By TRANSIT

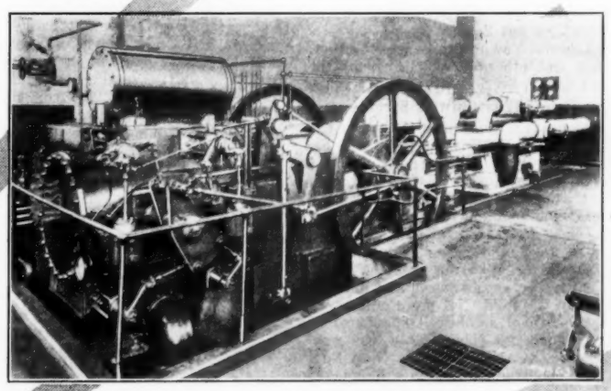
## CONTINENTAL OIL CO.

## *Ordered four—Right off the bat*

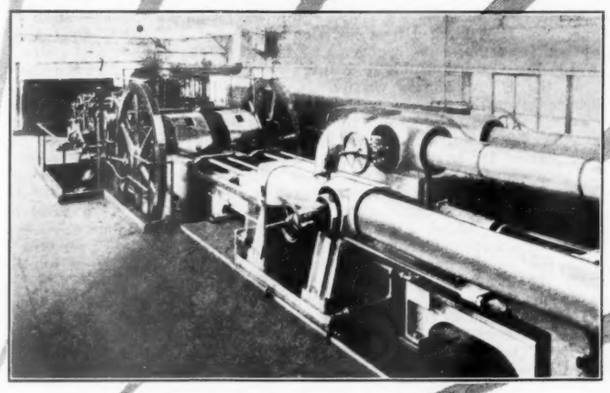
The progressiveness of the West is well exemplified by a recent installation by the Continental Oil Co., of four TRANSIT 15x35x3¾x24" Crank and Flywheel Hot Oil Pumps; one for Sapulpa and three for their Wichita Falls refinery.

At Sapulpa, The Continental needed more hot oil pump capacity in their refinery operations, but they were already short on steam—or boiler capacity.

We were consulted and recommended replacing their direct acting hot oil pumps with pumps of larger capacity, illustrated on the opposite page.



Sapulpa crank and flywheel TRANSIT Hot Oil Pump.



Another view of Sapulpa Pump.

Of course every refiner knows that the crank and flywheel steam end is very economical in the use of steam.

The Continental Oil Company are so well pleased with their installations of TRANSIT Crank and Flywheel Hot Oil Pumps that they have just ordered an additional unit, the fifth.

And we are proud of their installation, if you will permit us to say so, because we believe that they have chosen the outstanding type of hot oil pump developed up to this time.

Agents
FRICK-REID SUPPLY CORPORATION
Tulsa, Okla., or any store
REPUBLIC SUPPLY COMPANY
of California
Los Angeles, California
E. L. WILSON HARDWARE CO.
Beaumont, Texas

**PUMPS TRANSIT ENGINES**

NATIONAL TRANSIT PUMP & MACHINE CO. Oil City, Pa.

DISTRICT OFFICES
NEW YORK PHILADELPHIA PITTSBURGH
CLEVELAND HOUSTON TULSA LOS ANGELES

Agents
F. C. RICHMOND MACHINERY CO.
Salt Lake City, Utah
REEVES & SKINNER MACHINERY CO.
St. Louis, Mo.

# Few Completions in Central West

## Central Ohio Gas Companies Are Doing Most Work. One Producer in Indiana and One in Illinois

By Whit

*Staff Correspondent, Central West Fields*

FINDLAY, Ohio, Apr. 15.—But few completions were reported from the Central West Fields, outside of the Central Ohio division where the usual number were developed. In the old Lima Field of northwestern Ohio, William G. Leiber's No. 4 well, 50 feet from the south line and 500 from the west line of the Leiber farm, on the oil map as the Mary Kern, in the SW of Section 13, Richland Township, Allen County, produced an initial of 25 bbls. The top of the Trenton was found at 1,312 feet and oil at 57 feet in the sand. Mr. Leiber expects to start another well as soon as the drilling outfit can be moved. In Bath Township, J. W. Davis is drilling on the Milo Roberts farm, Section 16, and C. A. Peavey and others are drilling No. 3 on the G. G. Vore, Section 12, same township.

South of Toledo in Troy Township, Wood County, Charles Zeising and others' No. 1 in the NE cor. of the C. J. Miller farm, in the NE of Section 4, pumped 2 bbls. Sand was found at 1,276 feet and oil at 51 feet in the sand.

William B. Lawrence, Jr., and others' test in the NE cor. of F. L. Purdy farm, on the oil map as the A. and M. Jack farm, in the NE Section 6, Center Township, Mercer County, struck top of Trenton at 1,117 feet and at 43 feet in the sand pumped but 2 bbls. initial.

In Liberty Township, Seneca County, Duncan and others are drilling on the Rufus Chaney, Section 26.

### Forest-Wharton Gas Field

To look over the Forest-Wharton gas field, along the dividing lines of Hancock, Hardin and Wyandot Counties, one finds much of interest in the past development of that area in the fact that for years the gas wells found a short distance west, south and east of Forest produced gas with an abundance of sulphur content, but in the Wharton area in Wyandot County the gas is sweet and marketable as it is found. In the Forest area it was so full of sulphur it could not be used for fuel, but this trouble was remedied some time ago when the Ohio Fuel Gas Co. constructed a plant that takes out the sulphur and the gas is now sweet.

The well drilled by Harmon, Watts, Talbot and others on the O. D. Bell farm, Section 13, Delaware Township, Hancock County, a mile west of the Kern No. 1 in the Wharton Field, when drilled in was gauged with a U tube and at first reported as a 200,000-foot well—but later was producing 500,000 feet of sweet gas, similar to other wells finished west of Wharton in Hancock County. The well on the O. S. Bell farm, set a string of 23 feet of drive pipe, 320 feet of casing, topped Trenton at 1,295 feet; drilled 30 feet in the Trenton to a total depth of 1,325 feet and shot with 60 quarts. The contractors were Kennedy, Henry & Temple of Findlay, Ohio.

M. F. Whitehill, Jr., and others of Washington, Pa., drilled No. 4 on the Dickleman 60 acres, in the NW Section 19, Jackson Township, Hardin County, the well being in the NE cor. of an irregular shaped piece and drilled by contractors, Edmonds & Haynes of Newark, Ohio. In this well there were driven 18 feet of drive pipe, casing 246 feet, top of Trenton 1,239 feet, finished at 1,303 feet and shot with 100 quarts at from 12 to 40 feet in the sand. A little gas and slight show of oil was noticeable before the shot which did not improve it, and it was given up as a failure, but will likely be taken over by the farmer for domestic use.

### Well Caved In

While the Kurtz Gas Co. was drilling No. 2 on the Frank McKinley farm, the Aaron McKinley well No. 1 caved in and completely shut off the flow of gas. However, immediately upon completion of the Frank McKinley No. 2 the rig was moved back and erected over the Aaron McKinley well and the cave was drilled and bailed out and the well drilled three screws deeper. It is now putting into the gas line the original flow of gas the same as before the cave. This well was not tubed before the cave, neither is it now.

The Forest Oil & Gas Co. and the Hertzog Lime & Stone Co. drilled No. 2 on the Kurtz farm which is directly between the two big gas wells and about 900 feet south of William Kurtz' No. 1 and 700 feet north of the Aaron McKinley No. 1. The contractor on No. 2 Kurtz was Bert Sheldon, of Dunkirk, Ohio. In this well 30 feet of drive pipe was set; 285 feet of casing which was in the Red Rock; top of Trenton at 1,244 feet; finished at 1,337 feet and shot with 500 pounds of solidified, proved to be dry. This well was on the Kurtz 45 acres, in the SE of Section 19, Jackson Township, Hardin County.

The Kurtz Gas Co.'s No. 3 on the William Kurtz 180 acres, in the SW Section 20, Jackson Township, Hardin County, almost due east of the Aaron McKinley No. 1 but perhaps 200 feet south and 700 feet east, the contractors being Henry, Temple & Kennedy. The record of this well shows 28 feet of drive pipe, 248 feet of casing; Trenton topped at 1,227 feet and finished at 1,263 feet, and as it had no showing, was not given a shot and goes as a duster.

Both the Wharton and Forest Fields according to report will get more drilling activity with the advent of better weather. The old Patterson Field near-by has produced gas for more than 35 years.

### CENTRAL OHIO FIELDS

The Central Ohio Field shows 26 completions, 6 producers with an initial production of 75 bbls., 10 dry holes and 10 gas wells, while there were 8 new locations staked out and 22 tests started drilling, a total of 30 in new work under way. Outside of this 3 wells were reported from Morgan County, of which 1 was dry and 2 were gas, with 1 new well started. A large majority of the wells under way and completed are being done under the supervision of the large gas concerns, and they are keeping busier this season than for many years, on account of the wells not showing the large initial volume of gas when the fields were in their infancy. Large gas wells are almost a thing of the past in almost the entire eastern half of Ohio. Once in a great while a well shows from 2,000,000 to 6,000,000 feet initial although the majority of the wells brought in are far below a million feet.

In Ashland County, Greene Township, the Logan Gas Co. has a very fair gas producer in No. 2-3032 on the John Cowan farm, Section 20. Same company's No. 1-3077 on the W. W. Barnhill, Section 26, Orange Township, is also a gas producer above the average. In Lake Township, Robinson and others are drilling a second test on the Emma Devinney, Section 9, and starting on the John Cable, same section. In Mohican Township, Jones and others found a dry hole in No. 5 on the J. J. Winbigler, Section 4. O. W. Zink and others are drilling No. 1 Mrs. James Chesron, Section 32, and the Logan Gas Co. is drilling No. 1-3085 on the Hattie B. Metcal, Section 28. Smith & Faulkner are drilling No. 2 George Obrecht, Section 32. In Perry Township, McIntyre and others are drilling a second test on the Ed Gardner, Section 17.

In Medina County, Harris Township, Harmon & George, Mansfield operators, secured a very good gas well in a second test on the W. W. Wood, Lot 151, at 2,866-97 feet. In Chatham Township, the East Ohio Gas Co. is drilling No. 3 on the J. and J. Jelenies, Lot 2. The Logan Gas Co. made a location on the F. S. Reese, Lot 60, Westfield Township, and the Ohio Fuel Gas Co. is drilling No. 2-3500 on the Jacob Mong, Section 24, Lafayette Township.

In Lorain County, the Ohio Fuel Gas Co. has a light gas well in No. 2-3468 on the Fred L. Nobles, Section 1, Eaton Township, and a very good gas well in No. 1-3463 on the Julia A. Clark, Lots 13-18, Carlyle Township.

### Wayne County

In Wayne County, Congress Township, the Ohio Fuel Gas Co.'s No. 1-3479 Sarah E. Lowery, Section 13, is drilling and No. 1-3435 on the G. V. Kline, Section 7, is a dry hole. The Garn-Wooward Oil Co.'s No. 2 Henry Esselbaum, Section 11, is a duster in the shallow sand at from 386 to 400 feet. Barnhart and others are drilling on the Jennie Keim, Section 5. The Kemrow Co. has an average gas well in No. 7 on the Calvin Fry, Section 14, Wooster Township.

In Knox County, Brown Township, the Ohio Fuel Gas Co. made a location for No. 2-3514 on the D. R. Matthews, Section 4.

In Summitt County, Franklin Township, the test of Cameron and others on the Graber Allotment, Section 23, developed into a duster at 4,250 feet, while East Ohio Gas Co. has a fairly good gas well on the George Hemstetter, Section 27. Wiser Oil Co. is drilling a second test on the John F. Handley, Section 12, Copley Township. In Greene Township, F. A. Brendall and others' No. 1 Madison L. Kepler, Section 8, produced 30 bbls. initial from the Clinton lime formation. East Ohio Gas Co. found a dry hole on the C. L. Hatcher, Section 29, same township, at 3,900 feet. F. A. Brendall and others are drilling No. 1 Herbert Boettler, Section 16, and No. 1 Mary Yarrick, Section 3, same township, also drilling No. 1 William Dreese, Section 5, Spring Township, same county.

In Licking County, Hulse & Kuntz's test on the U. A. Moran, Section 11, Fallsburg Township, was dry in the shallow sand from 808 to 815 feet. Emerald Petroleum Co.'s No. 1 on the Jacob Weiss, Section 18, is reported making a fairly good showing of oil at from 1,800 to 1,857 feet, but yet incomplete, hence no estimate has been made until it is given a shot or drilled a little deeper. Hulse & Kundtz are drilling No. 8 Joseph Chaney, Section 1, Perry Township, same county. In Hopewell Township, same county, the Pure Oil Co.'s second test on the Henry Loughman, Section 1, is reported good for 32 bbls., at from 2,999 to 3,040 feet. The Hope Construction & Refining Co. has a fair showing of oil at a second venture on the Noah Coomes, same section, at from 3,091 to 3,131 feet. No. 3 rig is under way for No. 3 Henry Loughman, for the Pure Oil Co. and the Wehrle Gas Co. is starting a test on the James Iches, Section 4, same township.

### Muskingum County

In Muskingum County, the Ohio Fuel Gas Co.'s No. 1-3400 on the Ed P. Allen, Section 15, Perry Township, was a dry hole. Niagara lime was found at from 3,723 to 3,835 feet and Clinton lime from 4,000 to 4,024 feet. Same company shut down No. 1-3467 on the E. H. Berry, Section 3, same township. In this well the Berea was found at from 1,141 to 1,148 feet and drilled to a total depth of 1,165 feet, and probably will be drilled lower shortly in hope of getting something worth while in the other formation known to produce below the Berea. The Mid-East Oil Co.'s second well on the William Knight, Section 15, same township, does not look any too good so far as the drill has gone, as there has been only slight showing of oil and gas at a total depth of 4,005 feet. In this hole the top of the Clinton was found at 2,96[illegible] feet; first showing of gas at 3,975; first oil showing at 3,980; second gas showing at 3,985; second oil showing at 3,992 feet and bottom of Clinton at 3,995 feet. The Hope Construction & Refining Co. is reported to have a fairly good oil showing in No. 5 W. E. Helphrey, Section 6, Jackson Township, at from 2,983 to 3,030 feet. The Preston Oil Co. is drilling No. 1295 on the P. D. Adams, Section 1[illegible] Muskingum Township. In Washington Township, W. Hunter Atha's test on the Allied Coal Co.'s tract is a light gas well in the Clinton which was topped at 4,021 feet, the gas being found at 4,0[illegible] feet and total depth 4,067 feet. Robert Straker and others are drilling No. Grover Wilson, in the fourth quarter section of Washington Township.

In Athens County, the Logan Gas Co. has an average gas well in No. 67-30[illegible] on the Sunday Creek Coal Co., in fractional Section 24, Dover Township, from 3,901 to 3,911 feet, total depth 3,9[illegible] feet. Same company has a location for No. 72-3080, also on the Sunday Creek Coal land, in Section 29. Bailey Oil & Gas Co. has a light gasser in No. 3 W. C. Wells, Section 34, Berne Township, in the second Berea at from 1,543 to 1,564 feet, total depth 1,569 feet. Wiser Oil Co. is drilling No. 1 O. D. Jones, Section 32, same township. Ohio Fuel Gas Co.'s No. 1-2523 on the C. C. Snow grass, after drilling deeper to 1,708 feet gave it up as a duster. In Lodi Township, the Ohio Fuel Gas Co. is drilling No. 1-3483 on the Frank Sargent, fractional Section 1. Same company is reported to have a showing at the shallow depth of 993 feet in No. 2-3464 on the W. A. Swartz, also in Section 1. In Athens Township, the Athens State Oil & Gas Co.'s No. 1 Henry C. Graves, Section 1[illegible] is drilling.

In Meigs County, Sutton Township, the Penn Grit Oil Co.'s test on the Hannah Capehart, Section 30, is reported good for 3 bbls., in the Upper Berea at from 1,680 to 1,700 feet. Tyree and others' No. 1 on the Martin Eberback, Section 19, is said to show for 2 bbls., in the same upper formation at from 1,817 to 1,836 feet, total depth 1,839 feet. Same parties' No. 6 William Carnahan, Section 11, was dry in the Upper Cow Run sand at from 567 to 588 feet, total depth 5[illegible] feet. Ohio Fuel Gas Co.'s No. 3-245[illegible] on State of Ohio land, Section 29, same township, is reported at 2 bbls., from the Upper Berea at from 1,685 to 1,699 feet. The Pure Oil Co. is drilling No. 3 J. [illegible] and Blanch Ham, Section 20. Cochran and others are drilling No. 2 Roy C. Sansberry, Section 35, Salisbury Township, same county.

### Jackson County

In Jackson County, Franklin Township, the Ohio Fuel Gas Co. made a location for No. 1-3512 E. C. Chapman, Section 22, and the Penn Ohio Gas Co. is drilling No. 5 L. M. Evans, Section 2. In Lick Township, the Ohio Fuel Gas Co. is drilling No. 1-3470 on the Lillie L. Long, Lot 34. Same company is drilling No. 3-3335 on the C. W. Haslett, Section

(Continued on Page 180)

## COURT RESTRAINS TOWN LOT DRILLING

(Continued from Page 32)

Los Angeles, 195 U. S. 223, 235, the court said:

"The observations of Mr. Chief Justice Waite in that connection (Munn v. Illinois, 94 U. S. 113) had reference to the facts of the particular case and were certainly not intended to declare the right of either the legislature or a city council to arbitrarily deprive the citizen of rights protected by the Constitution under the guise of exercising the police powers reserved to the states. It may be admitted that every intendment is to be made in favor of the lawfulness of the exercise of municipal power, making regulations to promote the public health and safety, and that it is not the province of courts, except in clear cases, to interfere with the exercise of the power reposed by law in municipal corporations for the protection of local rights and the health and welfare of the people in the community. But notwithstanding this general rule of the law, it is now thoroughly well settled by decisions of this court that municipal by-laws and ordinances, and even legislative enactments undertaking to regulate useful business enterprises, are subject to investigation in the courts with a view to determining whether the law or ordinance is a lawful exercise of the police power, or whether under the guise of enforcing police regulations there has been an unwarranted and arbitrary interference with the constitutional rights to carry on a lawful business, to make contracts, or to use and enjoy property."

And it was there further said, quoting from Holden v. Hardy, 169 U. S. 366, 398:

"The question in each case is whether the legislature has adopted the statute in exercise of a reasonable discretion, or whether its action be a mere excuse for an unjust discrimination, or the oppression or spoliation of a particular class."

### Validity of State Statute

In Winkler v. Anderson, 177 Pac. 521, the Supreme Court of Kansas had for consideration the validity of a State statute which made it unlawful to drill or operate oil or gas wells within one hundred feet of the right of way of any steam or electric line of railway. Winkler had an oil and gas lease on a strip of ground within one hundred feet of the right of way of a steam railway and he filed his bill for the purpose of enjoining enforcement of the penal provisions of the statute. His lease was valueless if the statute was valid. He claimed that the statute deprived him of property without compensation, without due process, that it denied him equal protection of the laws and that it abridged his privileges and immunities contrary to the provisions of the Constitution of Kansas and the Constitution of the United States. The Court said:

"The police power extends, not only to protection of the public safety, health, and morals, but to the protection of the common convenience, prosperity, and welfare. State v. Wilson, 101 Kan. 789, 794, 168 Pac. 679, L. R. A. 1918-B, 374. While oil and gas wells are not nuisances per se, and the business of drilling and operating them is ordinarily legitimate and harmless, it is conceivable that they may become detrimental in a high degree. The greed for mineral in a rich field becomes insatiate. Steam and electric railway rights of way may be exploited and unless the works, structures, establishments, activities, and products of mining operations be kept at a safe distance from railway tracks, life and property might be endangered, commerce impeded, and the general welfare seriously affected. If the legislature acted from some such considerations as these, it possessed power to fix a limit within which drilling and operating should not intrude, and the court is unable to say that a free space of one hundred feet is unreasonable."

Notwithstanding the allegations of the bill, it seems undeniable to us that when work of the kind under consideration is carried on in residential or business sections of a town or city without some limit to the number of wells in a given area, they will necessarily become nuisances of a most aggravated sort to its inhabitants and its business interests. There will be annoyance from unsightly structures, disquieting noises of machinery, the immediate and constant presence of numbers of workmen and the persistent thought of impending danger from explosion and conflagration because of the highly inflammable nature of the product. Such a situation calls for some governmental restriction and control. The greater the number of wells in a city block the greater will be the annoyance and hazards to the public. Indeed, it would be hard to say that an ordinance prohibiting the drilling and operation of any well within the business or residential districts of a city would be an unreasonable and invalid exercise of the police power. We do not doubt the validity of the ordinance here challenged. Its requirements and regulations are in protection of the public welfare, effective if enforced to accomplish that purpose; and the passage and adoption of it cannot in our judgment be justly said to be an arbitrary and unreasonable exercise of the city's power. This is enough to dispose of the appeal.

### Substance of Things

But looking to the substance of things, as equity does, what are the rights of plaintiffs that will be encroached upon or denied to them by the enforcement of this audience? It is not the mere right to drill a well on one or two lots at great cost and stop with that, or to take the proportionate part of the oil and gas in the pool that might be said to lie under or be fairly attributed to those lots. The obvious purpose was to reach the pool as quickly as possible and take all of the oil and gas obtainable before others could get it, thus seriously encroaching upon and probably destroying the same rights of adjoining lot owners. If one or more lot owners have given a lease for which no permit is obtainable their lessee may join a lessee who has a permit in the same block on terms that are fair to both lessor and lessee. If a lot owner has not given a lease he is protected by the asking in a fair proportion of the mineral produced by a permittee. The regulations make every effort to protect, rather than to destroy rights. They extend equal opportunity to all who have an interest and eliminate the race between those having equal rights in a common source of wealth, so that some may not take all and leave others with nothing. Under the law in Kansas there is no property in oil and gas, because of their migratory nature, until they have been captured, though each surface owner may take without limit, unless lawfully restrained. Phillips v. Springfield Crude Oil Co., 92 Pac. 1,119; National Supply Co. v. McLeod, 27 Pac. 350. This is the rule also in Pennsylvania and Indiana. The nature of this right was fully discussed and defined in Ohio Oil Co. v. Indiana, 177 U. S. 190. The Court in that case, after accepting the general practice as a settled principle, that every owner of the surface within a gas or oil field might prosecute his efforts and reduce to his possession if possible all of the deposits without violating the rights of other surface owners, in the absence of regulations to the contrary, said:

"But there is a co-equal right in them to take from a common source of supply, the two substances which in the nature of things are united, though separate. It follows from the essence of their right and from the situation of the things, as to which it can be exerted, that the use by one of his power to seek to convert a part of the common fund to actual possession may result in an undue proportion being attributed to one of the possessors of the right, to the detriment of the others, or by waste by one or more, to the annihilation of the rights of the remainder. Hence it is that the legislative power, from the peculiar nature of the right and the objects upon which it is to be exerted, can be manifested for the purpose of protecting all the collective owners, by securing a just distribution, to arise from the enjoyment by them, of their privilege to reduce to possession, and to reach the like end of preventing waste."

### Community Interest

If this right in each and all of the surface owners can be thus restrained and its exercise regulated by a law of the State enacted for the purpose, how can it be held that a valid police regulation, which incidentally and in caution embodies the same restraint and regulation, can be made the basis of a claim that plaintiffs have a right to take all of it, and restraint of that right violates constitutional guaranties? The basis of a statute, suggested in the Indiana case, is the governmental power to equally protect each surface owner in his right to a common fund. Complaint is made that the city was not vested with that power. Let it be conceded; still it does not follow that a court of equity will lend its aid to one in his effort to take all of a fund in which there is a community interest. The bill seems to us to be wholly without merit and the judgments of dismissal are affirmed.

## WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 40)

W. W. Donnelly & Young's No. 1 Middlebuster, C Sec. 11, Blk. 9, D.&S.E. Sur. ..... 7,000,000 ft. gas at 1,663 ft.; shut down 1,755 ft.

W. A. Moncrief et al's No. 1 Massie, 1,170 ft. N and 1,320 ft. E of SW cor. Sec. 47, Blk. UV, G.C.&S.F. Sur. ..... Rigging up.

J. D. Wheeler's No. 1 State Land, 744 ft. S and 1,250 ft. E from SE cor. Sec. 73, Blk. 1, I.&G.N.R.R. Sur., but in Vacancy Strip ..... Top salt 492 ft.; set 8-in. casing 595 ft.; drlg. 1,397 ft.

**CULBERSON COUNTY**

Deep Rock Oil Co. et al's No. 1 Kloh-Rumsey, 800 ft. S and 1,422 ft. E of NW cor. Sec. 33, Blk. 59, Twp. 7, T.&P.R.R. Sur. ..... Fishing bit 1,460 ft.

Hickey & Stiver's No. 1 C. O. Finley, 660 ft. N and 1,980 ft. W Sec. 20, Blk. 82 ..... Hole full water; small oil show 1,331 ft.; pipe set 1,418 ft.; shut down 1,820 ft. for drilling lime.

W. S. Killyer's No. 1 McGregor, C NW Sec. 14, Blk. 81.. Shut down 720 ft. for water.

Scott & Dittman's No. 1 Miller, 1,160 ft. N and 2,480 ft. E Sec. 1, Blk. 97, Public School Land ..... Rainbow 1,056 ft.; 300 ft. sulphur water 1,725 ft.; shut down 1,800 ft. for funds.

**FISHER COUNTY**

Bickerstaff et al's No. 1 McWhirter, 2,640 ft. E and 150 ft. N of SW cor. of Sec. 295, Blk. 2, H.&T.C. Sur. .... Shut down 2,000 ft. for orders.

Cranfill & Reynolds' No. 2 Willingham, 1,980 ft. S and 2,310 ft. W of NE cor. Sec. 207, B.B.B.&C.R.R. Sur. .. Drlg. 3,218 ft.

Cranfill & Reynolds' No. 1 Fleming, 1,980 ft. S and 2,310 ft. E of NW cor. Sec. 207, B.B.B.&C.R.R. ..... Oil show 2,905 ft.; set 6-in. 3,160 ft.; shut down 3,263 ft.

Dunnegan Bros.' No. 1 T. Henry, 330 ft. N and E of SE cor. Sec. 21, George W. Burdett Sur. No. 322, but in Sec. 4, Robert Hibbett Sur. No. 331 ..... Drlg. 2,920 ft.

Gillman-McMurray & French's No. 1 Cleveland, 781 ft. N and 1,336 ft. W of SE cor. Sec. 116, Blk. 2, H.&T.C. Sur. ..... Set 8-in. casing 685 ft.; drlg. 2,830 ft.; hole full water.

Landreth Prod. Corp.'s No. 1 Cooper, 440 ft. SE of NE cor. NW Sec. 115, Blk. 1, H.&T.C. Sur. ..... Show oil 2,760-70 ft.; shut down 3,385 ft.

Mesa Oil Co.'s No. 1 Griffin, 849 ft. N and 465 ft. E of NE cor. Sec. 20, School Land ..... Drlg. 2,275 ft.

Roeser & Pendleton's No. 1 Haugh, 440 ft. S and 1,320 ft. E of NW cor. of SW of Sec. 191, B.B.B.&C.R.R. Sur. ..... Fishing 1,965 ft.

Texas-Phillips' No. 1 Hall, 330 ft. N and W of SE cor. Sec. 6, Blk. 20 ..... Drlg. 1,875 ft.

White Eagle Oil & Ref. Co.'s No. 1 Hughes, 4,942 ft. S and 560 ft. W of NE cor. Cosby Sur. 220 ..... Underreaming 700 ft.

**GAINES COUNTY**

Pure Oil Co.'s No. 1 A. A. Williamson, 1,650 ft. S and 330 ft. W of NE cor. Sec. 110, Blk. H. D.&W.R.R. .... Top salt 2,339 ft.; fishing 4,292 ft.

**GARZA COUNTY**

Emerald Oil Co.'s No. 1 J. S. Reed, 990 ft. W and 330 ft. N of SE cor. Sec. 135, Blk. 5, H.&C.N.R.R. Sur. ..... Location.

**GLASSCOCK COUNTY**

Chas. Daniel et al's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor. Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur. .. Shut down 500 ft.

R. R. Penn's No. 1 Hughes-Johnson, C NW Sec. 45, Blk. 30, W.&N.W. Sur. ..... Drlg. 3,145.

Merlweather Oil Co.'s No. 2 McDowell, 1,492 ft. N and 150 ft. E of SE Sec. 35, Blk. 34, Twp. 2s, T.&P. Sur. .. Hole full water 2,665 ft.; set 6-in. casing 2,700 ft.; drlg. 3,300 ft.

World Oil Co.'s No. 1-C McDowell, 1,650 ft. S and 2,310 ft. W of NE cor. Sec. 21, Blk. 34 ..... Underreaming 2,010 ft.

**HOWARD COUNTY**

Amerada Pet. Co. & Rycade Oil Corp.'s No. 7 Dora Roberts, 330 ft. S and 2,310 ft. W of NE cor. Sec. 137, Blk. 29, W.&N.W.R.R. Sur. ..... Rigging up standard tools 2,931 ft.

Amerada Pet. Corp.'s No. 8 Roberts, 1,116 ft. N and 1,022 ft. W of SE Sec. 128, Blk. 29, W.&N.W.R.R. Sur. ..... Drlg. 1,235 ft.

American Maracaibo Co.'s No. 1 Settles-D, 330 ft. S and 1,650 ft. E of NW cor. Sec. 158, Blk. 29, W.&N.W. R.R. Sur. ..... Drlg. 2,750 ft.

American Maracaibo Co.'s No. 5 Settles-C, 330 ft. S and W of NE cor. Sec. 5, Blk. 32, Twp. 2s, T.&P. ..... Drlg. 2,239 ft.

California Co.'s No. 5 Roberts, Lease 2, 1,170 ft. S and 150 ft. W of NE cor. Sec. 156, Blk. 29, W.&N.W.R.R. Sur. ..... Shut down 1,696 ft.

California Co.'s No. 1 Settles, 2,310 ft. N and W of SE Sec. 158, Blk. 28, W.&N.W. Sur. ..... Drlg. 3,253 ft.

Comet Oil Co.'s No. 3 Clay, 200 ft. S and E NW cor. Sec. 154, Blk. 29, W.&N.W.R.R. Sur. ..... Cleaning out 1,825 ft.

Cosden & Co.'s No. 3 Roberts, Lease C, 1,520 ft. N and 600 ft. W of SE cor. Sec. 128, Blk. 29, W.&N.W. R.R. Sur. ..... Total depth 1,339 ft.

Cosden & Co.'s No. 4 Dora Roberts-C, 200 ft. W and 1,520 ft. N of SE cor. Sec. 128, Blk. 29, W.&N.W. Sur. ..... Drlg. 560 ft.

Cranfill & Reynolds' No. 1 Kloh-Rumsey, 353 ft. N and 150 ft. W of SE cor. Sec. 3, Blk. 32, Twp. 2s, T.&P.R.R. Sur. ..... Cleaning out 2,296 ft.

Empire Gas & Fuel Co.'s No. 3 Clay, 1,315 ft. N and 1,570 ft. W of SE cor. Sec. 127, Blk. 29, W.&N.W. R.R. Sur. ..... Drlg. 1,095 ft.

F.H.E. Oil Co.'s No. 11-B Dora Roberts, 1,700 ft. S and 2,310 ft. E of NW cor. Sec. 137, Blk. 29, W.&N.W. Sur. ..... Drlg. 2,475 ft.

F. H. E. Oil Co.'s No. 5-D Dora Roberts, 2,310 ft. S and 1,650 ft. E of NW cor. Sec. 136, Blk. 29 ..... Set 6-in. casing 2,930 ft.; shut down.

Fuhrman Pet. Co.'s No. 1 Read, 2,310 ft. N and 230 ft. E of SW cor. Sec. 41, Blk. 32, Twp. 1n, T.&P.R.R. Sur... Location.

Gibson & Johnson's No. 1 Read, 660 ft. N and W of SE cor. Sec. 47, Blk. 30, Twp. 1n, T.&P.R.R. Sur. ..... Drlg. 160 ft.

Green et al's No. 1 Slaughter, C SW Sec. 32, Blk. 31, Twp. 3n, T.&P.R.R. Sur. ..... Rig.

Group No. 1 & Marland Prod. Co.'s No. 7 Settles, 330 ft. S and E of NW cor. Sec. 133, Blk. 29, W.&N.W. R.R. Sur. ..... Drlg. 2,223 ft.

L. C. Harrison et al's No. 1 G. M. Podge Est., SE cor. Sec. 9, Blk. 30, Twp. 1s, T.&P. Sur. — Hole full salt water 1,475-1,505 ft.; top lime 1,825 ft.; show oil 2,972-74 ft.; hole full fluid 3,257 ft.; total depth 3,257 ft.; plugged back to 3,000 ft. to shoot; cleaning out 2,936 ft.

Hyer & Yates' No 4 Clay, 990 ft. S and 1,650 ft. W of NE cor. Sec. 155, Blk. 29 — Set 6-in. casing 1,557 ft.; drlg. 1,665 ft.

Magnolia Pet. Co.'s No. 2 Hyman, 1,320 ft. W and 1,220 ft. N of SE cor. Sec. 88, Blk. 29, W.&N.W. Sur. — Location.

Magnolia Pet. Co.'s No. 13 Dora Roberts, 2,440 ft. N and 1,650 ft. E of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur. — Rigging up standard tools 2,927 ft.; shut down.

Marland Prod. Co.'s No. 3 Clay-F, 250 ft. S and 660 ft. W of NE cor. Sec. 138, Blk. 29, W.&N.W.R.R. Sur. — Shut down 2,675 ft.

Marland Prod. Co.'s No. 1 Clay-I, 210 ft. E and 1,520 ft. N of SW cor. Sec. 127, Blk. 29, W.&N.W.R.R. Sur. — Location.

Marland Oil Co.'s No. 1 Clay-H, 330 ft. S and 990 ft. W of NE cor. Sec. 155, Blk. 29 — Location.

Marland Oil Co.'s No. 2 Clay-H, 990 ft. S and W of NE cor. Sec. 155, Blk. 29 — Location.

Marland Oil Co.'s No. 3 Clay-H, 330 ft. S and W of NE cor. Sec. 155, Blk. 29 — Location.

Marland Prod. Co.'s No. 6 Clay, 330 ft. N and E of SW cor. Sec. 139, Blk. 29, W.&N.W.R.R. Sur. — Drlg. 1,440 ft.

Midwest Exploration Co.'s No. 4 Clay-C, 330 ft. N and W of SE cor. Sec. 138, Blk. 29, W.&N.W.R.R. Sur. — Drlg. 980 ft.

Moody Oil Corp.'s No. 15 Roberts-B, 2,310 ft. S and 380 ft. E of NW cor. Sec. 137, Blk. 29, W.&N.W.R.R. Sur. — Underreaming 2,565 ft.

Moody Oil Corp.'s No. 13 D. Roberts, 2,310 ft. S and 2,260 ft. E of NW cor. Sec. 137, Blk. 29, W.&N.W.R.R. Sur. — Drlg. 912 ft.

Merrick & Bristow's No. 8 Dora Roberts, 990 ft. N and 330 ft. E of SW cor. Sec. 137, Blk. 29, W.&N.W. Sur. — Cem. 8¼-in. 1,929 ft.; total depth 2,973 ft.

Plymouth Oil Co.'s No. 2 Kloh et al, 990 ft. S and 1,650 ft. W of NW cor. Sec. 5, Blk. 32, Twp. 2s, T.&P. R.R. Sur. — Underreaming 890 ft.

Plymouth Oil Co.'s No. 3 Kloh et al, 1,650 ft. S and 990 ft. E of NW cor. Sec. 5, Blk. 32, Twp. 2s, T.&P. R.R. Sur. — Drlg. 330 ft.

Schermerhorn Oil Co.'s No. 5 Roberts-A, 1,650 ft. S and 2,250 ft. W of NE cor. of Sec. 137, Blk. 29, W.&N.W. Sur. — Shut down 2,612 ft.

Schermerhorn Oil Co.'s No. 6 D. Roberts-A, 1,650 ft. S and 330 ft. W of NE cor. Sec. 137, Blk. 29, W.& N.W.R.R. Sur. — Rig.

Superior Oil Co.'s No. 14 Dora Roberts-B, 2,310 ft. E and 380 ft. S of NW cor. Sec. 137, Blk. 29, W.&N.W. Sur. — Shut down 200 ft.

Superior Oil Co.'s No. 15 Dora Roberts-B, 2,310 ft. S and 380 ft. E of NW cor. Sec. 137, Blk. 29, W.&N.W. R.R. Sur. — Underreaming 2,565 ft.

Ward Oil Co.'s No. 7 Roberts, 2,310 ft. N and 380 ft. E of SW cor. Sec. 137, Blk. 29, W.&N.W.R.R. Sur. — Drlg. 1,957 ft.

Witherspoon et al's No. 2 Kloh-Rumsey, 280 ft. N and 3,315 ft. E of SW cor. Sec. 3, Blk. 32, Twp. 2s, T.&P.R.R. Sur. — Total depth 2,318 ft.; preparing to pump.

**HUDSPETH COUNTY**

American Land Co.'s No. 1 Lockhart & Roseborough, C SE Sec. 5, School Blk. 21 — Total depth 260 ft.; shut down; tools moved off.

California Co.'s No. 1 University, 3,821 ft. N and 2,554 ft. E of SW cor. Sec. 19, Blk. E — Set 16-in. casing 591 ft.; drlg 701 ft.

Western States Oil Co.'s No. 1 Moore, C SE Sec. 16, Blk. 71, Twp. 6, T.&P. Sur. — Straightreaming 2,700 ft.; total depth 2,865 ft.; fishing job.

Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW Sec. 12, Blk. 18 — Hole full water 2,945 ft.; underreaming 8¾-in. casing at 2,840 ft.; trying to get water shut off; shut down 3,140 ft.; trying to pull casing.

**IRION COUNTY**

Fuhrman Pet. Co.'s No. 1 J. O. Suggs, Lease 1, C SE Sec. 3,024, Blk. 24, H.&T.C. Sur. — Location.

Fuhrman Pet. Co.'s No. 1 J. D. Suggs, Lease 2, C SW Sec. 3,009, Blk. 24, H.&T.C. Sur. — Drlg. 610 ft.

Kimbrough & Filmchbaugh's No. 1 Tankersley, 160 ft. S and 200 ft. W of NE cor. Sec. 712, Ford Willig Sur. — Drlg. 1,010 ft.

Kimbrough & Tuel's No. 1 J. M. Nutt, 1,920 ft. S. 200 ft. E of NW cor. Sec. 5, Gonzales Co. School Land — Set 6-in. casing 1,360 ft.; show oil and gas; shut down 1,400 ft.

Signal Oil Co.'s No. 2 Suggs, 5,240 ft. from N line and 996 ft. from W line, Sec. 23, Blk. 27, H.&T.C. Sur. — Top salt 760 ft.; set 15-in. casing 1,360 ft.; set 8-in. casing 2,150 ft.; drlg. 2,610 ft.

F. E. Webb et al's No. 1 J. M. Nutt — Shut down 3,511 ft.

Wesley West et al's No. 1 J. D. Suggs, SE NW SE Sec. 19, Blk. 7, H.&T.C. Sur. — Top pay 3,368 ft.; swabbed 35 bbls. oil and 40 bbls. water; 35.8 gravity oil; show oil 5,480-83 ft.; show oil 5,660-70 ft.; drlg. 5,985 ft.

**JEFF DAVIS COUNTY**

J. K. Hughes Dev. Co.'s No. 2 Means, 1,622 ft. N line, 600 ft. W line Sec. 345, H.&T.C. Sur. — Show gas 3,271 ft.; fresh water 3,060-65 ft.; underreaming 5 3/16-in. casing; shut down.

**JONES COUNTY**

Condor Pet. Co.'s No. 1 McDonald, 340 ft. S and 240 ft. W of NE cor. Lot 59, G. A. Kirkland Sur. A-550 — Drlg. 1,385 ft.

J. E. Brewer's No. 1 Goodman, 150 ft. N and E of SW cor. Sec. 15, Blk. 19, T.&P.R.R. Sur. — Location.

Cosden & Herbert Oil Co.'s No. 1 Bickley, 320 ft. N and 319 ft. E of SW cor. S half NW Sec. 50, Blk. 18, T.&P. Sur. — Rigged up and shut down.

Cosden-Herbert et al's No. 3 Bickley, 330 ft. N and W of SE cor. of S half NW Sec. 50, Blk. 18 — Cellar.

W. G. Clark et al's No. 1 Collins, 330 ft. S and E of NW cor. Sec. 29, Blk. 18, T.&P.R.R. Sur. — Location.

W. G. Clark et al's No. 1 Dickenson, W 80 ac. of N 160 ac. of S 320 ac. out of H. B. Williams Sur. No. 273 — Rig.

P. K. French's No. 1 Lieson, 150 ft. N and E of SW cor. of E half NW Sec. 31, Blk. 14, T.&P.R.R. Sur. — Drlg. 215 ft.

Grisham & Hunter Corp.'s No. 1 Hester, 330 ft. N and E of SW cor. of E half, Lot 12, Kratz Sur. A-247 — Drlg. 2,300 ft.

Humble Oil & Ref. Co.'s No. 1 Bickley, 330 ft. N and 200 ft. E of SW cor. of N half of S half of SW Sec. 50, Blk. 18, T.&P.R.R. Sur. — Drlg. 1,250 ft.

Humble Oil & Ref. Co.'s No. 2 Bickley, 330 ft. S and W of NE cor. of SW Sec. 50, Blk. 18, T.&P.R.R. Sur. — Rig.

McGinley Corp.'s No. 1 Whittemore, 660 ft. N and W of SE cor. SE NE Sec. 39, B.B.B.&C. — Shut down 1,720 ft.

McNeeley et al's No. 1 Roscoe Bland, 1,175 ft. N and 240 ft. W of SE cor. Subdivision 20, A-164, DeWitt Co. School Land — Spudded and shut down.

Phillip Pet. Co.'s No. 3 Pomeroy, SW cor. of S 106 ac. SW Sec. 16, Blk. 19, T.&P.R.R. Sur. — Building rig.

Phillips Pet. Co.'s No. 1 Walters, 990 ft. S and 330 ft. W of NE cor. N 80 ac. of W 160 ac. of NW Sec. 16, Blk. 19, T.&P. Sur. — Rigging up.

Sedgwick O. & G. Co.'s No. 1 Routh, 1,250 ft. N, 2,500 ft. W SE cor. 299-acre tract, Austin & Williams Sur. 355-A-7 — Drlg. 3,027 ft.

Sedgwick Oil & Gas Co.'s No. 1 Brown, 660 ft. N and 1,320 ft. E of SW cor. Sec. 9, Blk. 1, T.&N.O. Sur. — Location.

The Texas Company's No. 2 Camp, 2,829 ft. N and 323 ft. W of SE cor. Camp 189.5-acre lease, Sec. 13, T.&P. Sur., Blk. 19 — Drlg. 1,320 ft.

The Texas Company's No. 3 Camp, 1,189 ft. S and 326 ft. W of NE cor. of Sec. 13, Blk. 19, T.&P. — Drlg. 530 ft.

The Texas Company's No. 6 Carter, 200 ft. S and W of NE cor. of L. Carter 173.5-ac. tract out of Sec. 13, Blk. 19, T.&P. — Drlg. 2,500 ft.

U. L. Tomberlin's No. 1 Horn, 1,980 ft. N and 600 ft. E of SW cor. of 502 ac. of Penney Sur. A-283 — Spudded and shut down.

E. M. Treat Oil & Gas Co.'s No. 1 Hodge, 750 ft. S and 2,714 ft. W of NE cor. of S half A. Bell Sur. — Rig.

W. D. Wells et al's No. 1 Britton, 150 ft. N and 890 ft. E SW cor. 640-ac. tract, H.&W. Sur. 354-355 — Spudding.

White Eagle Oil & Ref. Co.'s No. 1 W. B. Teague, 933 ft. N and W of SE cor. Sec. 30, Austin & Williams Sur. No. 339 — Rig.

**KIMBLE COUNTY**

McLean & Jamison's No. 1 Cannon, 1,940 ft. N and 300 ft. W of SE cor. Robert Cochran Sur. — Drlg. 160 ft.

**LOVING COUNTY**

Lockhart & Co.'s No. 1 Hazell, 2,792 ft. SW of NE line and 660 ft. NW of SE line Sec. 84, Blk. 33, H.&T.C. R.R. Sur. — Rigging up standard tools and shut down.

Lockhart & Co.'s No. 2 Hayzell, 330 ft. from NE and SE line of Sec. 84, Blk. 33, H.&T.C.R.R. Sur. — Skidding rig.

Lockhart & Co.'s No. 1 H. L. Lepp, 330 ft. each way from S cor. of Sec. 3, Blk. 2, W.&N.W. Sur. — Top salt 715 ft.; drlg. 2,491 ft.

Lockhart & Co.'s No. 1 Hubbard, 2,640 ft. NE and 660 ft. NW Sec. 84, Blk. 33, H.&T.C.R.R. Sur. — Top salt 700 ft.; cem. 8¼-in. casing 2,640 ft.; drlg. 3,100 ft.

Lockhart & Co.'s No. 2 Hubbard, 1,660 ft. from NE line and 330 ft. from SE line of Sec. 83, Blk. 33, H.&T.C.R.R. — Top salt 718 ft.; drlg. 1,750 ft.

Lockhart & Co.'s No. 1 Johnson, 660 ft. S and 1,980 ft. W of NE cor. Sec. 20, Blk. 56, Twp. 1, T.&P.R.R. Sur. — Rigging up standard tools.

Lockhart & Co.'s No. 1 Wheat-H, 990 ft. from NE and SE lines Sec. 85, Blk. 33, H.&T.C.R.R. Sur. — Top salt 720 ft.; drlg. 2,165 ft.

**MIDLAND COUNTY**

Phillips Pet. Corp.'s No. 1 Stokes, 440 ft. S and W of NE cor. S. Beall Sur. No. 101, Blk. 37, Twp. 2s, T.P.R.R. Sur. — Fishing 550 ft.

**MITCHELL COUNTY**

H. H. Adams' No. 1 Elwood, 2,490 ft. E and 1,175 ft. N of SW cor. Sec. 20, Blk. 18, S.P.R.R. Sur. — Drlg. 528 ft.

The California Co.'s No. 2 Clark Lease No. 2, 2,190 ft. N and E of SW cor. Sec. 14, Blk. 28, Twp. 1n, T.P.R.R. Sur. — Drlg. 370 ft.

Ellis and Atlantic O. P. Co.'s No. 1 Elwood, 660 ft. N and E of SW Sec. 30, Blk. 18, S.P.R.R. Sur. — Set 8-in. casing 618 ft.

McGinley & Seiger's No. 1 Scott, C of NE of SW Sec. 36, Blk. 17, S.P.R.R. Sur. — Shut down 730 ft.

Magnolia Pet. Co.'s No. 6 Foster, 1,980 ft. N and E of SW cor. Sec. 17, Blk. 29, Twp. 1s, T.&P.R.R. Sur. — Total depth 2,875 ft.; shut down.

Simms Pet. Co.'s No. 1 Elwood, C SE of Sec. 29, Blk. 18, S.P.R.R. Sur. — Underreaming 10-in. casing 1,073 ft.; drlg. 2,442 ft.

Teas & Wheeler's No. 1 Radford, 1,320 ft. N and W of Sec. 1, Blk. 27, T.&P. Sur. — Four bailers salt water per hour 3,405 ft.; straightening crooked hole 3,965 ft.

Westyde Investment Co.'s No. 1 Elwood, C SW Sec. 38, Blk. 16, S.P.R.R. Sur. — Location.

**NOLAN COUNTY**

L. G. Bradstreet et al's No. 1 Kuteman, C NW Sec. 95, Blk. X, T.&P. Sur. — Rig.

**PECOS COUNTY**

Alexander & Lyle's No. 1 Myrtle Sellman, C SW SE Sec. 20, Blk. Z, T.S.Ry. Sur. — Top salt 814 ft.; top lime 1,602 ft.; 3,400,000 ft. gas from 1,611-26 ft.; spraying very little oil; sulphur water 1,652 ft.; shut down 1,655 ft.

Atlantic O. P. Co.'s No. 1 Trees, 330 ft. from N and 990 ft. from W line Sec. 108, Blk. 8, H.&G.N.R.R. Sur. — Moving in material.

M. H. Black's No. 1 P.V.O. Co., 2,310 ft. from SE and 1,650 ft from SW lines Sec. 22, Blk. 10, H.&G.N. Sur. — Drlg. 206 ft.

H. R. Bell et al's No. 1 Gray, 150 ft. from S and 2,490 ft. from W line Sec. 593, G.C.&S.F.R.R. Sur. — Underreaming 506 ft.

Buell & Hagan's No. 1 University-B, 330 ft. N and 2,310 ft. W of SE cor. Sec. 36, Blk. 18, University Land — Moving in material.

Cowboy Evans' No. 1 Pecos Valley, 2,310 ft. from NW line, 990 ft. from SW line of Sec. 36, Blk. 3, E.&T.C. R.R. Sur. — Location.

Crowley's No. 1 Heiner, 2,400 ft. each way from N and E lines Sec. 589, G.C.&S.F.R.R. Sur. — Underreaming 10-in. casing 510 ft.; shut down 860 ft.; show oil and gas.

California Co.'s No. 2 Smith, Lease 5. Sec. 16, 1,550 ft. from W and 200 ft. from N line Blk. 194, G.C.&S.F. R.R. Sur. — Drlg. 990 ft.

Ditto Oil Co.'s No. 1 J. M. Montgomery, Sec. 104, Blk. 331, A-16,387 — Shut down 660 ft.

Geyer & Frates' No. 1 Smith, 1,320 ft. each way from N and E lines Sec. 8, Blk. 14, T.&St.L.R.R. Sur. — Fishing 1,235 ft.

Gulf Prod. Co.'s No. 16 Smith-B, 990 ft. S and 990 ft. E of NW cor. Sec. 22, Blk. 194, G.C.&S.F.R.R. Sur. — Drlg. 1,442 ft.

Imperial Oil & Gas Co.'s No. 1 Pecos Valley Oil Co., 990 ft. from SE line and 1,650 ft. from SW line Sec. 22, Blk. 10, H.&G.N.R.R. Sur. — Location.

Sam Kitts and others' No. 1 Sherbino, 330 ft. from N and 990 ft. from W line Sec. 52, Blk. C-4, G.C.&S.F. R.R. — Location.

Matador Oil Co.'s No. 3 Smith, 2,310 ft. from N and 990 ft. from E lines, Sec. 24, Blk. 194, G.C.&S.F.R.R. Sur. — Moving in machine.

Mauch & Kroger's No. 1 Holmes, Sec. 5, Blk. 178, T.C. Sur. — Fishing 1,355 ft.

McMan Oil & Gas Co.'s No. 5 Smith-C, 2,600 ft. S and 1,740 ft. from W line of Sec. 25, Blk. 194, G.C.&S.F. — Shut down 1,599 ft.

Mid-Kansas Oil & Gas Co.'s No. 26 Yates, 1,312 ft. N from most southerly N line, 1,388 ft. E from most westerly E line Sec. 32, Blk. 194, G.C.&S.F.R.R. Sur. — Drlg. 395 ft.

Mid-Kansas & Transcontinental's No. 27 Yates-A, 1,296 ft. E and 250 ft. S of NE cor. Sec. 31, Blk. 194, G.C.&S.F. Sur. — Drlg. 812 ft.

Moncrief et al's No. 1 Tippett, 1,980 ft. from S and 660 ft. from W lines of Sec. 46, Blk. 194, G.C.&S.F. Sur. — Location.

R. E. Moore's No. 1 Arnold, 1,320 ft. from S and 660 ft. from E lines of Sec. 18, Blk. 1, H.&T.C.R.R. — Location.

Perrin et al's No. 1 Eaton, 150 ft. each way from NE and NW lines Sec. 27, Blk. 3, H.&T.C. Sur. — Total depth 1,490 ft.; 2,500,000 ft. gas.

Phillips Pet. Co.'s No. 1 Courtney, 440 ft. S and E of NW cor. Sec. 78, Blk. OW, T.M.R.R. Sur. — Location.

Phillips Pet. Co.'s No. 2 Ramsey, 990 ft. S and 1,980 ft. W of NE cor. Sec. 17, Blk. 194, G.C.&S.F. Sur. — Location.

Stein & McGee's No. 1 Louis Paterson, 150 ft. SE of NW line, 150 ft. NE of SW Sec. 34, Blk. 10, H.&G.N. — Drlg. 635 ft.

B. J. Spikes' No. 1 George Brown ..... Shut down 700 ft.
Schumaker et al's No. 1 Williams et al, 330 ft. N of middle of S line Sec. 1, Blk. 117, G.C.&S.F. ..... Shut down 700 ft.
Talbot and others' No. 1 Unsicker, 150 ft. each way from NE and SE cor. line of Sec. 25, Blk. 10, H.&G.N. Sur. ..... Location.
Tidal Oil Co.'s No. 1 University, 1,320 ft. from S and W lines of Sec. 16, Blk. 20, University Land ..... Location.
Transcontinental Oil Co.'s No. 1 Sellman, 990 ft. N and W of SE cor. Sec. 7, Blk. 194, G.C.&S.F.R.R. Sur. .... Drlg. 135 ft.
Transcontinental Oil Co.'s No. 1 University, NE NW SW Sec. 18, Blk. 18 ..... Top lime 1,155 ft.; straightening crooked hole 4,199 ft.; drlg. 4,307 ft.
Weekley Oil Corp.'s No. 1 Byrne, 990 ft. each way from NW and SW lines of Sec. 24, Blk. 10, H.&G.N.R.R. Sur. ..... Building rig.
World Oil Co.'s No. 1 Kloh, Sec. 47, Blk. 45, Twp. 8, T.P.R.R. Sur., elev. 2,810 ft. ..... Shut down 3,105 ft.

**PRESIDIO COUNTY**

Phillips Pet. Co., Empire G. & F. Co., Delmar Oil Co. and C E. Miller's No. 1 Tootle Est., C NE Sec. 75, Blk. 3, D.&P.R.R. Sur. ..... Set 8-in. casing 2,365 ft.; shut down.
L. C. Brite's No. 3 Brite, 2,500 ft. N and 2,300 ft. W of SE cor. Sec. 51, Blk. 12, G.H.&S.A. ..... Location.

**REAGAN COUNTY**

Big Lake Oil Co.'s No. 1-C University, 2,598 ft. S and 250 ft. W of NE cor. Sec. 1, Blk. 2, University Land.. Drlg. 2,070 ft.
Kemrow Co.'s No. 1 Sawyer Cattle Co., 1,320 ft. from N and 1,980 ft. from E line Sec. 8, J. G. Robinson Sur. ..... Location.
R. V. Oberholtzer's No. 1 Talley, 1,650 ft. each way from S and W lines Sec. 6, G.C.&S.F.R.R. Sur. ..... Drlg. 2,650 ft.
Skelly Oil Co.'s No. 4 University, 2,310 ft. N and 990 ft. W of SE cor. Sec. 33, Blk. 8 ..... Location.

**REEVES COUNTY**

Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor. Sec. 26, Blk. C-18, Public School Land, elev. 2,847 ft. ..... Total depth 2,900 ft.; shut down.
Southern Crude O. P. Co.'s No. 1 Kloh-Rumsey, 2,310 ft. N and W SE cor. Sec. 23, Blk. 51 ..... Hole full water; shut down 1,048 ft.
David R. Thompson's No. 1 A. A. Eddins ..... Fishing casing 5,658 ft.
Robert Penn et al's No. 1 Bowles, 2,310 ft. SW of NE cor. Sec. 36, Blk. 50, Twp. 8, T.&P.R.R. Sur. ..... Top salt 1,725 ft.; hole full fluid 5,176 ft.; running 6⅝-in. casing.
Lee O. White et al's No. 1 Kloh-Rumsey, 660 ft. S and E of NW cor. Sec. 5, Blk. 51, Twp. 10, T.&P. Sur. .... Skidded rig 20 ft. north.

**RUNNELS COUNTY**

Boyce et al's No. 1 E. O. Lange, 2,300 ft. S and 6,900 ft. W of NE cor. Austin & Williams Sur. No. 262 ..... Shut down 1,350 ft.
Foster et al's No. 1 Currie, 1,866 ft. SE of NW line, 335 rt. SW of NE line Gray Carroll Sur. ..... Straightening crooked hole.
R. D. Hamilton et al's No. 1 A. Spill, 1,320 ft. S and W of NE cor. A. Spill 891 acres, out of Thomas R. Webb Sur. 358 ..... Shut down 100 ft.
Independent Oil & Gas Co.'s No. 1 Will Rollwitz, 330 ft. S and W of NE cor. S half M. Salinas Sur. No. 20½.. Setting casing 1,474 ft.
Marland Prod. Co.'s No. 1 August Herring, 330 ft. S and 1,650 ft. W of NE cor. Sec. 39, E.T.R.R. Co. Sur... Underreaming 2,455 ft.
McLean et al's No. 1 G. W. Clayton, 150 ft. N line, 270 ft. from W line Sec. 135, E.T.R.R. ..... Shut down 1,185 ft.
Nourse & Tilton's No. 1 R. A. Stokes, 200 ft. S, 600 ft. E of NW cor. G. C.&S.F. Sur. No. 2 ..... Drlg. 3,100 ft.
Pure Oil Co.'s No. 1 Russell, 367 ft. E and 12,231 ft. S of NW cor. Hughes Sur. No. 227 ..... Location.
Pure Oil Co.'s No. 2 Russell, 945 ft. E and 12,015 ft. S of NW cor. Sur. No. 227 ..... Location.
R. B. Summers et al's No. 1 J. W. Reese, M. J. Farramore Sur. 26 ..... Shut down 1,650 ft.
Union Oil Co. of Nevada's No. 1 W. E. Allen, 1,000 ft. N and W of SE cor. Sec. 1, H.E.&W.T. Sur. ..... Shut down 3,850 ft.
Vacuum Oil Co.'s No. 4 McMillan, 555 ft. S and 717 ft. W of NE cor. Lot 22, Domingo Diaz Sur. No. 532 ..... Location.

**SCHLEICHER COUNTY**

J. F. Long and O. C. Long's No. 1 W. H. Williams, NE cor. Sec. 28, H.E.&W.T.R.R. Sur. ..... Shut down 275 ft.

**SCURRY COUNTY**

J. B. Mims et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C. Sur. ..... Spudded and shut down 300 ft.
W. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Shut down 2,710 ft.

**STERLING COUNTY**

W. & G. Oil Co.'s No. 1 W. L. Foster, C SE Sec. 20, Blk. 12, S.P.R.R. Sur. ..... Show oil 1,296-98 ft. and 1,356-58 ft.; fishing 2,182 ft.
George L. Miller's No. 1 Foster, 3,690 ft. S and 1,397 ft. W of NE cor. Sec. 4, Blk. 31, T.&P. Sur. ..... Set 12½-in. casing 830 ft.; set 8-in. casing 2,138 ft.; drlg. 2,750 ft.

**SUTTON COUNTY**

Phillips Pet. Co.'s No. 1 A. G. Holman, 2,310 ft. S and 330 ft. W NE cor. Sec. 25, G.C.S.D.&N.G.R.R. Sur. .. Drlg. 6,365 ft.
A. G. Priest's No. 1 Allison, 1,320 ft. N and E of SW cor. Sec. 52, Blk. A, T.&P. Sur. ..... Set 15-in. casing 530 ft.; drlg. 1,335 ft.
Southern C. O. P. Co.'s No. 1 Allison, 2,310 ft. S and 330 ft. W of NE Sec. 41, Blk. K, G.H.&S.A. Sur. ..... Drlg. 4,025 ft.

**TAYLOR COUNTY**

W. B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor. Sec. 46, Lunatic Asylum Land ..... Drlg. 1,795 ft.
Mid-Continent Oil & Gas Co.'s No. 1 Taylor, 990 ft. W 215 ft. N SE cor. 100-ac. tract, Sec. 18, Guadalupe School Land Sur. ..... 300 ft. oil 2,384-87 ft.; 2,445-50 ft.; swabbed 5 bbls.; shut down 3,006 ft.
Foot Drlg. Co.'s No. 1 Martin, 990 ft. E and 1,650 ft. N of SW cor. Sec. 30, Blk. 19, T.&P.R.R. Sur. ..... Drlg. 600 ft.
Wentz Oil Corp.'s No. 1 Armour, 275 ft. N and 330 ft. W of SE cor. W half Sec. 16, Blk. 6, S.P.R.R. Sur. ... Drlg. 2,245 ft.

**TERRELL COUNTY**

Big Bend Oil Co.'s No. 1 Barrett, C NW Sec. 155, Blk. D, M.-K.-T.R.R. Sur. ..... Spudded and shut down.
Block Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Blk. D-7, E.L.&R.R. Sur. ..... Shut down 1,749 ft.
Mrs. J. B. McPhee's No. 1 Sam Belt, C Sec. 78, Blk. D-7, E.L.&R.R. Sur. ..... Location.
Millham Exploration Co.'s No. 1 Bassett, Sec. 76, Blk. Y, W. E. Robertson Sur. ..... Cem. 6⅝-in. casing 3,986 ft.; drlg. 4,760 ft.
Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. ..... Shut down 150 ft.

**TERRY COUNTY**

Aggland O. & P. Co.'s No. 1 Brownfield, C NW SW SW Sec. 7, Blk. 1-A, E.L.R.R. Sur. ..... Fishing bailer 5,080 ft.

**TOM GREEN COUNTY**

Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,624, E. H. Ringer ..... Shut down 1,920 ft.
Williams et al's No. 1 Willeke, 2,500 ft. N and 75 ft. E of SW cor. Sec. 3, Deaf & Dumb Asylum Land ..... Total depth 750 ft.

**UPTON COUNTY**

Gulf Oil Co.'s No. 1 Long, 2,310 ft. each way from S and W line of Sec. 3, Sur. A-356 ..... Rigging up.
Humble O. & R. Co.'s No. 11 Ricker, 1,320 ft. from NE cor. and 5,390 ft. from NW line Sec. 5, Denton Sur. A-127 ..... Rigging up.
Wentz Oil Co.'s No. 5 Shirk, 2,310 ft. N and 1,650 ft. W of SE cor. Sec. 35, Blk. 1, M.-K.-T.R.R. Sur. ..... Top salt 815 ft.; total depth 1,890 ft.; fishing.

**YOAKUM COUNTY**

Weekley Oil Corp.'s No. 1 Knight, C NW Sec. 791, Blk. D, John Gibson Sur. ..... Drlg. 625 ft.

**VAL VERDE COUNTY**

Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 4,850 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Gas sand 2,491-2,520 ft.; tested 125,750 ft. gas; reset 8-in. 2,511 ft.; shut down 4,210 ft.
Producers Oil Co. et al's No. 1 Everett Bros., 2,310 ft. S and 330 ft. E of NW cor. Sec. 40, Blk. DB, C.C.S.D.&R.G.N.G. Sur. ..... Shut down 2,290 ft.
Dyar Bros et al's No. 1 Wilson, 6,830 ft. N NE cor. Sec. 1, T.&P. Sur., thence 1,680 ft. E Sec. 115, Blk. E, G.C.&S.F. Sur. ..... Shut down 2,715 ft.
Valvert Oil Corp.'s No. 1 Bassett, C NE Sur. 47, Blk. Y .. Set 15½-in. casing 767 ft.; set 10-in. casing 1,510 ft.; shut down 3,600 ft.

**WARD COUNTY**

Gulf Prod. Co.'s No. 4 O'Brien et al, C NW SW Sec. 19, Blk. F, G.M.M.&M.A. Sur. ..... Set 15½-in. casing 475 ft.; set 10-in. casing 1,153 ft.; top salt 1,290 ft.; making 300 bbls. 5 hrs. 2,565-2,624 ft.
J.H.L. Oil Co.'s No. 2 Hayzlett, 1,100 ft. from SW and 220 ft. from SE line Sec. 17, Blk. 5, H.&T.C. ..... Drlg. 960 ft.
E. B. Lovelace et al's No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 162, Blk. 34, H.&T.C.R.R. ..... Fishing 960 ft.

**WINKLER COUNTY**

American Maracaibo Co.'s No. 2 Hendricks-B, 1,980 ft. N and 1,650 ft. E of SW cor. Sec. 28, Blk. B-5 ..... Cem. 12½-in. casing 170 ft.; drlg. 2,540 ft.
Atlantic O. P. Co.'s No. 5 Hendricks, 1,320 ft. S and 2,310 ft. W NE cor. Sec. 44, Blk. 26 ..... Running 12½-in. casing 570 ft.; drlg. 2,650 ft.
Barnsdall Oil Corp.'s No. 2 Tobe Morton, 1,650 ft. N and 330 ft. E of SW cor. Sec. 26, Blk. B-12 ..... Cem. 8¼-in. 2,758 ft.; top lime 2,571 ft.; cem. 8¼-in. casing 2,758 ft.; set 5-in. casing 2,996 ft.; shut down 3,123 ft.; plugging back.
Barnsdall Oil Corp.'s No. 3 Tobe Morton, 990 ft. N and 330 ft. E of SW cor. Sec. 26, Blk. B-12 ..... Cellar.
Empire Gas & Fuel Co.'s No. 1-B Daugherty, 2,310 ft. S and 990 ft. W of NE cor. Sec. 3, Blk. 74 ..... Top lime 2,823 ft.; oil and gas show at 3,165 ft.; drlg. 3,378 ft.; flowing 15,000 bbls. daily; cem. 6⅝-in. casing 3,382 ft.; total depth 3,469 ft.; trying to cement casing.
Humble O. & R. Co.'s No. 10 Hendricks-C. Lease 2, 2,200 ft. S and 330 ft. E of NW cor. Sec. 10, Blk. B-12 ..... Top lime 2,460 ft.; total depth 2,852 ft.
Humble O. & R. Co.'s No. 11 Hendricks-C. Lease No. 2, 1,980 ft. S and 1,325 ft. E of NW cor. Sec. 10, Blk. B-12, Public School Land ..... Cem. 10-in. casing; drlg. 481 ft.
Prairie O. & G. Co.'s No. 2 Daugherty, 330 ft. S and 990 ft. E of NW cor. Sec. 16, Blk. 74 ..... Top lime 2,756 ft.; cem. 8¼-in. casing at 2,759 ft.; rigging up rotary.
Prairie O. & G. Co.'s No. 1 Scarborough, 990 ft. N and 1,650 ft. W of SE cor. Sec. 1, Blk. C-22 ..... Cem. 12½-in. casing 260 ft.; top salt 1,400 ft.; set 8¼-in. casing 2,845 ft.; drlg. 2,993 ft.; 400 ft. oil in hole.
Shell Pet. Co.'s No. 1 Leck, 990 ft. S and 1,650 ft. E of NW cor. Sec. 3, Blk. 74 ..... Drlg. 2,757 ft.
Shell Pet. Co.'s No. 5 Scarborough, 330 ft. N and 990 ft. E of SW cor. Sec. 3, Blk. C-22 ..... Top salt 1,110 ft.; drlg. 3,373 ft.
Skelly Oil Co.'s No. 2 Hendricks-C, 1,320 ft. N and 2,310 ft. W of SE cor. Sec. 10, Blk. B-12 ..... Top lime 2,636 ft.; cem. 8¼-in. 2,642 ft.; fishing tools 2,805 ft.
Southern Crude O. P. Co.'s No. 6 Hendricks T-67-3-A, 990 ft. S and 1,650 ft. W of NE cor. Sec. 4, Blk. B-12 ..... Cem. 12½-in. casing 2,245 ft.; cem. 8¼-in. casing 2,664 ft.; rigged up standard tools and shut down.
Southern Crude O. P. Co.'s No. 5 Hendricks T-67-F, 330 ft. N and 990 ft. W of SE cor. Sec. 33, Blk. B-5, School Land ..... Top lime 2,711 ft.; cem. 8¼-in. casing 2,784 ft.; rigging up standard tools 2,784; flowing 60 bbls. hourly 2,745-2,784 ft.
Simms Pet. Co. et al's No. 2 Sealey, 2,434 ft. S and 990 ft. W of NE cor. Sec. 50, G.M.M.&A. Sur. ..... Rotary rig.
Southern Crude O. P. Co.'s No. 8 Hendricks T-88-C, 2,310 ft. S and 1,650 ft. E of NW cor. Sec. 28, Blk. B-5, School Land ..... Top lime 2,515 ft.; cem. 8¼-in. casing 2,535 ft.
Southern Crude O. P. Co.'s No. 6 Hendricks T-88-K, 2,200 ft. S, 1,650 ft. W of NE cor. Sec. 41, Blk. 26 .... Cem. 8¼-in. casing 2,662 ft.; rigging up standard tools.
Southern Crude O. P. Co.'s No. 7 Hendricks T-88-K, 1,320 ft. S and 1,650 ft. W of NE cor. Sec. 41, Blk. 26 ..... Rig.
Southern Crude O. P. Co.'s No. 32 Hendricks T-88-M, 1,760 ft. S and 990 ft. W of NE cor. Sec. 33, Blk. 26, School Land ..... Total depth 134 ft.
Southern Crude O. P. Co.'s No. 6 Hendricks T-88-N, 1,320 ft. N and W of SE cor. Sec. 28, Blk. 26, School Land ..... Drlg. 440 ft.
Southern Crude O. P. Co.'s No. 7 Hendricks T-88-N, 2,320 ft. N and 2,640 ft. W of SE cor. Sec. 28, Blk. 26.. Running 12½-in. casing 515 ft.
Southern Crude O. P. Co.'s No. 3 Hendricks T-88-O, 440 ft. S, 330 ft. W of NE cor. Sec. 28, Blk. 26 ..... Cem. 2,388 ft.; rigging up standard tools.
Southern Crude O. P. Co.'s No. 4 Hendricks T-88-O, 1,320 ft. S and W of NE cor. Sec. 28, Blk. 26 ..... Rigging up rotary.
Southern Crude O. P. Co.'s No. 1 Hendricks, T-88-CX, 440 ft. N and 330 ft. W of SE cor. Sec. 21, Blk. 26, School Land ..... Cem. 12½-in. casing 780 ft.; top lime 2,390 ft.; cem. 8¼-in. casing 2,402 ft.; total depth 2,749 ft.; flowing 372 bbls. daily.
Southern Crude O. P. Co.'s No. 7 Hendricks T-88-H, 2,310 ft. N and 990 ft. E of SW Sec. 28, Blk. B-5, School Land ..... Top lime 2,552 ft.; cem. 8¼-in. casing 2,580 ft.; fishing bit; 200 ft. oil in hole 2,760 ft.
Southern Crude O. P. Co.'s No. 3 Hendricks T-88-R, 1,320 ft. N and E of SW Sec. 27, Blk. 26 ..... Location.
Southern Crude O. P. Co.'s No. 6 Hendricks T-89-J, 2,200 ft. S and 330 ft. W of NE cor. Sec. 9, Blk. B-12.. Top lime 2,510 ft.; cem. 8¼-in. 2,525 ft.
Southern Crude O. P. Co.'s No. 7 Hendricks T-89-J, 1,540 ft. from N and 1,320 ft. from E lines Sec. 9, Blk. B-12 ..... Cem. 12½-in. casing 371 ft.; drlg. 1,230 ft.
Southern Crude O. P. Co.'s No. 8 Hendricks T-89-J, 440 ft. N and 330 ft. W of SE cor. Sec. 9, Blk. B-12 ..... Location.
Texas Canadian Oil Co.'s No. 1 Kloh-Rumsey, 4,320 ft. N and E of SW cor. Sec. 35, Blk. 46, T.&P.R.R. Sur. .. Drlg. 1,600 ft.

# KEEPING PACE WITH THE

# FRI

## "QUALITY GOES DEEP"

AXELSON MACHINE COMPANY, Sucker and Pull Rods, Working Barrels, etc.

BEAUMONT IRON WORKS COMPANY, DREADNAUGHT Rotary Drilling and Pumping Equipment.

DONOVAN BOILER WORKS, Oil Country Boilers and Tanks.

FRICK-REID SERVICE RUBBER BELTING—Our Own Specifications.

JONES & LAUGHLIN STEEL CORPORATION, Tubular Goods, Seamless and Lap-welded.

NATIONAL TRANSIT PUMP & MACHINE COMPANY, Pumps and Pipe Line Equipment.

WM. POWELL COMPANY, Valves for the Oil Industry.

J. P. RATIGAN, "SURE GRIP" Line of Pumping Equipment.

JOSEPH REID GAS ENGINE COMPANY, Gas and Oil Engines, Pumping Powers, Refinery Equipment.

JOHN A. ROEBLING'S SONS COMPANY, Wire Lines and Welding Wire.

ROSSENDALE REDDAWAY COMPANY, Camel Hair Belting.

WALWORTH COMPANY, Fittings and Valves for all branches of oil industry.

WHITLOCK CORDAGE COMPANY, Waterflex Manila Cordages, Drilling Cables, Bull Ropes, Cat Lines, etc.

# The Frick-Reid

## PITTSBURGH

**COVERS THE FIELD WITH WELL MANAGED STORE**

# PETROLEUM INDUSTRY

# ICK-REID

MEET
CLARENCE J. BEST
MANAGER OF OUR
WICHITA STORE
MR. BEST WAS
BORN AMIDST
THE OIL FIELDS
OF OHIO

## THE WICHITA FIELD

The Wichita Field in Sedgwick County, Kansas, was opened by the discovery well on the Wright farm, in Section 12-26s-1w, Sedgwick County, early in September, 1928. Pay was encountered at 3,367 feet and the well started off at 1,729 bbls. the first 24 hours. This well and No. 2 on the same lease are now making 2,850 bbls. per day seven months after the discovery. The pay is characterized as Simpson, or as it is sometimes termed, the Kansas-Wilcox Sand. Four months after the initial well was brought in, the No. 1 Goodrich, in Section 16-25s-1e, about 5 miles northeast of the discovery well, surprised all by coming in a well in the "Chat" at 3,022 feet, which produced 4,139 bbls. the first 24 hours. At this writing there are 41 producing wells in the Field making 23,000 bbls. per day or an average of 561 bbls. per well per day and there are 90 wells drilling in the county, while in Harvey County 11 wells are being drilled and in Marion County 15, all influenced by the successes in northern Sedgwick County.

The Wichita area is the most active spot in all Kansas and the production, which has been steadily climbing, is believed to be far below the peak estimate of even the most conservative oil men.

id Supply Corporation
TULSA
RE FROM THE ATLANTIC TO THE ROCKY MOUNTAINS

## WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 39)

Camel Oil Co.'s No. 1 Harrah-B, 330 ft. each way from NW cor. NE. Sec. 150, Blk. 3, I.&G.N. Sur. ..... Drlg. 675 ft.

Champlin Ref. Co.'s No. 1 McLaughlin, 330 ft. S and W of NE cor. Sec. 33, Blk. B-2, H.&G.N. Sur. ..... Drlg. 400 ft.

Crabtree Drlg. Co.'s No. 1 B. F. Talley, SW NE, Sec. 114, Blk. M-2, B.S.&F. Sur. ..... S.O. 2,400 ft; S.D. 2,749 ft.

Cockrell-McElroy et als' No. 1 McConnell, 330 ft. each way from NE cor. W½ SW, Sec. 174, Blk. 3, I.&G. N.R.R. Sur. ..... Drlg. 2,550 ft.

Cockrell McElroy Oil Co.'s No. 2 McConnell, 330 ft. S and E of NW cor. W½ SW, Sec. 174, Blk. 3, I.&G. N.R.R. Sur. ..... Location.

Constantine et als' No. 1 Dial, 330 ft. S and E of NW cor. W¼ NW, Sec. 32, Blk. 25, H.&G.N. Sur. ..... Drlg. 2,965 ft.

Danciger O & R. Co.'s No. 1 H. K. Beck, 330 ft. S and E of NW cor. NW, Sec. 28, Blk. B-2, H.&G.N. ..... Location.

Danciger et als' No. 1 Sheridan, SE cor. Sec. 184, Blk. B-2, H.&G.N.R.R. Sur. ..... Location.

Delaney and Associates Oil Co.'s No. 8 Jackson, 990 ft. S and 330 ft. E NW cor. E½ SW, Sec. 88, Blk. B-2, H.&G.N.R.R. Sur. ..... Location.

Dye & Gillette's No. 1 J. L. Noel, 330 ft. each way from SE cor. E½ NE, Sec. 187, Blk. 3, I.&G.N.R.R. Sur... Stdzng. 1,005 ft.

Empire G. & F. Co.'s No. 1 A. R. Clay, NE cor. Sec. 185, Blk. B-2 ..... 3,288 ft; 300 ft. oil; 1,000 ft. wtr. 3,364 ft; P.B. to 3,169 ft. C.O.

Eslick & McKinney's No. 1 Mrs. Hopkins, 330 ft. from NE E½ NE, Sec. 84, Blk. B-2, H.&G.N. Sur. ..... Drlg. 3,140 ft.

Sines & Reiger's, formerly Eslick et als,' No. 1 Mrs. J. A. Hopkins, NW cor. W 80 ac. of SW, Sec. 84, Blk. B-2, H.&T.C. Sur. ..... Drlg. 3,140 ft.

Gardner Bros. and Collins' No. 1 Lincoln-Saunder, 330 ft. S and W of NE cor. W½ NE, Sec. 3, Blk. 1, A.C.H.&B. Sur. ..... Run. 15-in. csg. 300 ft.

Gardner Bros. & Collins' No. 2 Saunders, 350 ft. from N on center line of W 68 of W½ of E½ of J. G. Eustis Sur. ..... Location.

Gulf Prod. Co.'s No. 1 Jackson, 295 ft. N and 305 ft. E of SW cor. W½, Sec. 62, Blk. B-2, H.&G.N.R. R. Sur. ..... Location.

Harrell's No. 1 McConnell, 330 ft. S and W of NE cor E½ SE Sec. 187, Blk. 3, I.&G.N.R.R. Sur. ..... Location.

Independent O. & G. Co.'s No. 1 Hottenbeck, 990 ft. each way from NE cor. NE, Sec. 176, Blk. 3, I.&G. N.R.R. Sur. ..... Drlg. 1,530 ft.

Magnolia Pet. Co.'s No. 4 J. B. Bower, 330 ft. S and 270 ft. E of NW cor. Sec. 63, Blk. B-2, H.&G.N.R. R. Sur. ..... Location.

Magnolia Pet. Co.'s No. 1 Gething, 530 ft. each way from SE SW, Sec. 14, Blk. A-9, H.&G.N. Sur. ..... T.D. 3,075 ft. to P.B

Marland Prod. Co.'s No. 2 Brown, 330 ft. N and W of SE cor. Sec. 32, Blk. B-2, H.&G.N.R.R. Sur ..... Spudding.

McLain Oil Co.'s No. 1 Back, 1,000 ft. from W line and 330 ft. from N line, NW, Sec. 24, Blk. 25, H.&G. N. Sur. ..... Drlg. 2,125 ft.

McMan O. & G. Co.'s No. 1 Saunder, 330 ft. N and E of SW cor. E 80 acres W½ of E½, J. G. Eustice Sur. ..... Drlg. 500 ft.

Midwest O. & G. Co.'s No. 1 Bower-B, 1,650 ft. from E and 330 ft. from N lines, Sec. 93, Blk. B-2, H.&G. N.R.R Sur. ..... T.D. 3,297 ft.

Nabob Oil Co.'s No. 2 Morse, 660 ft. from W line and 330 ft. from S line SW, Sec. 67, Blk. 25, H.&G.N. R.R. Sur. ..... Cellar.

Operator Oil Co.'s No. 1 Faulkner, 330 ft. N and E of SW cor. of W 60 acres Sec. 30, Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 1,973 ft.

Operators Oil Co.'s No. 7 Jackson, 330 ft. S and 270 ft. W of NE cor. N½ NE, Sec. 88, Blk. B-2, H.&G.N. Location.

Phillips Pet. Corp.'s No. 5 Jackson, 330 ft. S and 990 ft. E of NW cor. S½ NE, Sec. 88, Blk. B-2, H.&G.N. Location.

Phillips Pet. Co.'s No. 1 Palmer, 330 ft. N and W of SE cor. Sec. 31, Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 1,990 ft.

Panhandle Ref. Co.'s No. 1 Saunder, 330 ft. S and E of NW cor E½ NE, Sec. 3, Blk. 1, A.C.H.&B. Sur. ..... Drlg. 350 ft.

Panhandle Ref. Co.'s No. 2 Saunders, 330 ft. S and W of NE cor. E½ NE, Sec. 3, Blk. 1, A.C.H.&B. Sur. . Location.

Scott Drlg. Co.'s and others No. 1 Chapman, 330 ft. N and E of SW cor. of S½ of NE Sec. 69, Blk. 25, H.&G.N. Sur. ..... Location.

Shamrock Pet. Co.'s No. 2 Chapman-A, 990 ft. E and 330 ft. from S lines S½ SW, Sec. 70, Blk. 25, H.& G.N.R.R. Sur. ..... Drlg. 1,805 ft.

Shamrock Co.'s No. 2 Clayton, 330 ft. S and 425 ft. E of NW, W. S. Clayton 277.4-ac. tract out of Sec. 50, Blk. 25, H.&G.N. Sur. ..... Location.

St. Clair Oil Co.'s No. 1 Dial, 330 ft. S and W of NE cor. SE, Sec. 10, Blk. 25, H.&G.N.R.R. Sur. ..... Cellar.

St. Clair Oil Co.'s No. 1 Rowe, Sec. 32, Blk. R ..... Drlg. 3,475 ft.

St. Clair Oil Co.'s No. 1 L. S. Stockton, SE cor. Sec. 35, W. R. Lee Sur. ..... Spudded and S.D.

Southern Pet Exp. Co.'s No. 4 McConnell, 330 ft. N and E of SW cor. NW, Sec. 174, Blk. 3, I.&G.N.R.R. Sur. Drlg. 2,300 ft.

Sun Oil Co.'s No. 1 Purviance, 330 ft. S and W of NE W 80 acres, Sec. 61, Blk. B-2, H.&G.N.R.R. Sur.. Derrick.

The Texas Co.'s No. 5 J. B. Bowers, 330 ft. N and 990 ft. E of SW cor. of E½, Sec. 89, Blk. B-2, H.&G. N.R.P. Sur. ..... Drlg. 2,060 ft.

The Texas Co.'s No. 6 Bowers, 270 ft. W and 330 ft. N of SE cor. E½, Sec. 89, Blk. B-2, H.&G.N.R.R. Sur. ..... Location.

The Texas Co.'s No. 7 Bowers, 330 ft. E and 990 ft. N of SW cor. E½, Sec. 89, Blk. B-2, H.&G.N. Sur.. Bldg. rig.

The Texas Co.'s No. 6 Chapman-A, 330 ft. N and 755 ft. E of SW cor. SE, Sec. 51, Blk. 25, H.&G.N. Sur.. Rig.

The Texas Co.'s No. 1 Faulkner, 330 ft. each way from NW cor. Sec. 29, Blk. B-2, H.&G.N. Sur. ..... Drlg. 1,360 ft.

The Texas Co.'s No. 2 Faulkner, 330 ft. each way from SW cor. Sec. 29, Blk. B-2, H.&G.N.R.R. Sur. ..... Spudding.

The Texas Company's No. 5 McLarty-A, 330 ft. S and E of NW cor. Sec. 2, Blk. 1, A.C.H.&B. Sur. ... Location.

The Texas Co.'s No. 2 McLarty-B, at center of J. M. Rose Sur. ..... Rig.

The Texas Co.'s No. 10 Saunders, 330 ft. N and W of SE cor. W½ of J. G. Eustis Sur. ..... Drlg. 2,522 ft.

The Texas Co.'s No. 1 Purviance et al, 330 ft. each way from NW cor. Sec. 61, Blk. B-2, H.&G.N.R.R. Sur. ..... Derrick.

Travis et als' No. 2 Back, 330 ft. each way from NW cor. E½ SE cor. Sec. 44, Blk. 25, H.&G.N.R.R. Sur.. Drlg. 655 ft.

Travis et als' No. 1 J. S. Morse, SE NW SW, Sec. 68, Blk. 25, H.&G.N. Sur. ..... 30,000,000 ft. gas 2,592-2,610 ft; light spray oil 2,740-45 ft; to deepen; drlg. 2,745 ft.

Wilcox-Pampa Oil Co.'s No. 6 Comb-Worley, 330 ft. N and 990 ft. E of SW cor. Sec. 60, Blk. 3, I.&G.N. R.R. Sur. ..... Location.

Wilcox-Pampa Oil Co.'s No. 31 Worley Reynolds, 330 ft. N and E SW cor. SE SW, Sec. 61, Blk. 3, I.&G.N.... S.O. 2,928 ft; T.D. 3,154 ft; may shoot.

### HOCKLEY COUNTY

World Oil Co.'s No. 1 Ellwood, 320 ft. from N and W lines, League 7, Wilbarger County school lands; elevation 3,363 ft.; contract depth 5,000 ft. ..... S.D. 1,455 ft.

### HARTLEY COUNTY

Amarillo Oil Co.'s No. 9 Lee Bivins "A," C NW, Sec. 6, Blk. 21 ..... 15,000,000 ft. gas 3,300-35 ft; T.D. 3,601 ft; S.D.

Canadian River Gas Co.'s No. 10 Burns-A, 660 ft. N and 660 ft. E, Sec. 18, Blk. 2, G.&M. Sur. ..... Drlg. 2,020 ft.

### HUTCHINSON COUNTY

Antelope Creek Oil Co.'s No. 3 Sanford, 330 ft. from N line and 330 ft. from W line of E½ S 160 ac. of Sec. 82, Blk. 46, H.&T.C. Sur. ..... S.D. 3,085 ft.

Amarillo Oil Co.'s No. 2 Ingerton-A, 1,650 ft. from N line, 1,071 ft. from E line, Sec. 41, H.&T.C.R.R. Sur.. Rig.

Dunnigan et als' No. 1 C. W. Hugenbyhl, 330 ft. from S line and 330 ft. from E line, N½, Sec. 4, Blk. T, W.&N.G.R.R. Sur. ..... Shot with 60 qts. 3,110-40 ft; swb. 20 bbls; S.D.; C.O. 3,232 ft.

Gulf Prod. Co.'s No. 44 Dial, 330 ft. N and 325 ft. W of NE cor. Sec. 36, Blk. M-23, T.C.R.R. Sur. ..... Location.

Gulf Prod. Co.'s No. 45 Dial, 660 ft. S and 660 ft. W of NE cor. S½ Sec. 25, Blk. 47, H&T.C. ..... Location.

Holmes et als' No. 1 Moore, 330 ft. N and E of SW cor. N½ E 80 ac., SE, Sec. 125, Blk. 4, I.&G.N.R. R. Sur. ..... Location.

Marland Prod. Co.'s No. 1 Johnson-C, 450 ft. S and W of NE cor. Sec. 5, Blk. 1, B.&B. Sur. ..... Drlg. 2,740 ft.

Marland Prod. Co.'s No. 1 Sanford-C, 783 ft. N and 230 ft. W of SE cor. N½, Sec. 79, Blk. 46, H.&T. C.R.R. Sur. ..... Location.

Oil Operators Trust Co. and Marland's No. 2 J. M. Stanford-B, Sec. 82, Blk. 46, H.&T.C. Sur. ..... S.D. 3,039 ft.

Phillips Pet. Co.'s No. 4 Johnson-Pulaski, 330 ft. from N line and E line of W½, Mary Whitley Sur. ..... Spudding.

Phillips Pet. Co.'s No. 5 Johnson Bros. (Florence), 330 ft. each way from S and E line of E½, Mary Whitley Sur. ..... Drlg. 340 ft.

Phillips Pet. Co.'s No. 6 (Florence), 330 ft. each way from S and W lines, E½ ..... Rig.

Phillips Pet. Co.'s No. 3 Sanford-Garland, 330 ft. N and E of SW cor. Sec. 77, Blk. 46, H.&T.C. Sur. ..... Plugged back 2,907 ft.

The Texas Corp.'s No. 2 Moore, 990 ft. from N line and 330 ft. from W line SW, Sec. 125, Blk. 4, I.&G.N. Sur... U.R. 8-in. csg. 2,420 ft.

Timms et als' No. 1 Moore, 330 ft. N and E of SW cor. S 40 ac. NW, Sec. 21, Blk. M-21, T.C.R.R. Sur. ..... Drlg. 2,420 ft.

### KING COUNTY

The Texas Co.'s No. 1 J. H. Johnson ..... S.D. 4,300 ft.

Huff Oil Co.'s No. 1 Martin, 1,320 ft. from N line and 1,320 ft. from E line, Sec. 171, Blk. F, H.&T.C. Sur.. Rig.

### LAMB COUNTY

Dan Freal et als' No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ..... Drlg. 315 ft.

### LIPSCOMB COUNTY

Brown et als' No. 1 Box T Ranch, SW NE, Sec. 612, H.&T.C. Sur. ..... S.D. 3,128 ft.

Ruby Oil Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... Straightening crooked hole 4,428 ft.

### LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ..... Small show oil 1,133-40 ft; sand; fish. 4,105 ft; S.D. 4,167 ft.

### MOORE COUNTY

Amarillo Oil Co.'s No. 2 Warrick, C S 160 ac., Sec. 92, Blk. 46, H.&T.C. Sur. ..... Drlg. 1,960 ft.

Barnsdall Oil Co.'s No. 1 Harrison, 330 ft. from N line and 330 ft. from E line of S½ NE, Sec. 5, Blk. M-2.. Rig.

Canadian Gas Co.'s No. 1 Kilgore-A, 2,716 ft. S and 2,695 ft. W of NE cor. Sec. 1, Eustis Sur. ..... U.R. 8-in. csg. 2,910 ft.

Devonian Oil Co.'s No. 1 Sneed, 330 ft. N and 2,335 ft. W of SE cor. of S 160 ac. of N 320 ac., M. Robinson Sur. ..... T.D. 3,030 ft; fishing.

Dixie Creek Oil Co.'s No. 4-A Sneed, Jr., 330 ft. S and W of NE cor. E½, Sec. 65, Blk. 3 ..... 10,000,000 ft. gas 2,835 ft; 50 ft. oil 3,304-05 ft; H.F.W. 3,354 ft; P.B. to 3,336 ft; shot with 55 qts. 3,305-25 ft; and second shot 3,217-38 ft; C.O.; preparing to complete as gas well.

Fritch O. & G. Co.'s No. 1 Lee Burns, C NE 40 ac. of N 160 ac., Sec. 4, Geo. Mahan Sur. ..... Spudded and S.D.

McMan O. & G. Co.'s No. 2 Sneed, 2,260 ft. S and 990 ft. W of NW cor. J. W. Proctor Sur., located in M. Robinson Sur. ..... Swbd. 140 bbls. 14 hrs. 3,157-60 show water 3,163-63 ft. to P.B.

Skelly Oil Co.'s No. 6 Armstrong & Byrd, 1,600 ft. S and 990 ft. E NW cor. of J. N. Proctor Sur. ..... Run. 6⅝-in. csg. 3,060 ft.

Skelly Oil Co.'s No. 7 Armstrong & Byrd, 2,260 ft. S and 990 ft. E NW cor. J. N. Proctor Sur. ..... Drlg. 2,090 ft.

Phillips Pet. Co.'s No. 1 Burnett, 330 ft. each way from NE cor. NE, Sec. 192, Blk. 3-T, T.&N.O. Sur... S.O. 3,287 ft; fish. 3,384 ft; 400 ft. oil in hole.

Phillips Pet. Co.'s No. 3-A Sneed, Jr., 1,600 ft. S and 430 ft. W of NW cor. J. N. Proctor Sur. ..... Drlg. 2,425 ft.

Phillips Pet Co.'s No. 4 Sneed, 1,600 ft. S and 990 ft. W of NW cor. J. W. Proctor Sur., and located in M. Robinson Sur. ..... 400 ft. oil, 3,142-45 ft; swbd. 140 bbl. 3,151-53 ft.

Phillips Pet. Co.'s No. 1 Taylor, 330 ft. N and E of SW cor. E½ NW cor. Sec. 244, Blk. 3-T, T.&N. O. Sur. ..... Set 8¼-in. csg. 2,650 ft.

### MOTLEY COUNTY

Explth. Co.'s No. 1 Tillson ..... Drlg. 3,925 ft.

Explth. Co.'s No. 5 Matador, C, Sec. 45, Blk. J-B, C.B. &C.N.G.R.R. Sur. ..... Rig.

Explth. Co.'s No. 6 Matador, 330 ft. from N line and 330 ft. from E line, Sec. 132, Blk. M ..... Rig.

Matador Oil Corp.'s No. 1 Owen, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... Rig.

### ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. 5-A..... Formerly abd. at 5,240 ft; small show 36 gravity oil 5,288-91 ft; show oil brown sand 5,710-12 ft; 300 ft. wtr; S.D. 5,975 ft; to P.B. and shoot.

### WHEELER COUNTY

Arnold Oil Co. et als' No. 1 Ritchey, 420 ft. from E and 163 ft. from S lines of NW cor. Sec. 5, Blk. 24, H.&G.N. Sur. ..... Drlg. 2,270 ft.

Byrens et als' No. 1 Johnson, SW cor. NE, Sec. 88, Blk. A-5, H.&G.N. Sur. ..... S.D. 2,920 ft.

Fain-McGaha and Humble's No. 1 Noel, 330 ft. each way from NE cor. S½ SE, Sec. 54, Blk. 24, H.&G. N. Sur. ..... Drlg. 2,825 ft.

Gibson Oil Co.'s No. 7 Bentley, 330 ft. N and W of SE cor. NW SE, Sec. 42, Blk. 24, H.&G.N. Sur. ..... Location.

Holmes et als' No. 1 Close, 660 ft. N and W of SE cor. Sec. 82, Blk. 23, H.&G.N. Sur. ..... Location.

Johnson & Co.'s No. 1 Purcell, 430 ft. from N line and 570 ft. from W line NE, Sec. 50, Blk. 17, H.&G.N. Sur.. C.O. 1,935 ft.

Lone Star Gas Co.'s No. 1 Turnbow, C NE SW, Sec. 67, Blk. 17, H.&G.N.R.R. Sur. ..... Drlg. 1,700 ft.

Lone Star Gas Co.'s No. 1 Griswold, C of NE of SE Sec. 1, Blk. 24, H.&G.N. Sur. ..... Rigging up.

Lone Star Gas Co.'s No. 1 Ridenger, C SW NW, Sec. 65, Blk. 17, H.&G.N.R.R. Sur. ..... Location.

Mudge Oil Co.'s No. 2 Hicks, C SE of NW Sec. 52, Blk 17, H.&G.N. ..... Rigging up.

L. W. Rook's No. 2 A. Smock, C SW SE, Sec. 5, Blk. 24, H.&G.N. Sur. ..... Rig.

Upham Gas Co.'s No. 1 Raybo, C S½ NW NW, Sec. 105, Blk. 23, H.&G.N. Sur. ..... Show gas 1,695 ft; pulling pipe.

# Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

*In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.*

*Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.*

*In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.*

*In case an immediate answer is important, one will be given by mail if the writer requests it.*

## NEEDS PETROLEUM GEOLOGIST

**If salt is found in sufficient quantity at a shallow depth on what looks to be a natural structure along a fault, would it be advisable to go deeper in the hopes of finding oil when you know there is a big lime to go through? I know of just such a place near here, and it seems to be in a basin. Even the water runs in three different directions.**

**There is a show of oil in well near there and also some seepage close by. Salt in this well was so bad it ruined the flues in the boiler in three or four weeks. A well 6 miles south of this place has splendid shows in it at 180 feet, 715 feet and at the present depth, 1,000 feet. —A. D. I.**

This question should be answered by a competent petroleum geologist only after he has made a complete field examination and thoroughly studied all of the available facts bearing upon the possible or probable occurrence of oil at greater depths than those already reached by the drill. This department would not be warranted in attempting to answer your question with the meager information that you have submitted.

A great deal depends upon the regional geology, the size and character of the structure that you mention, and upon the possible or probable occurrence of good reservoir beds at depths below those to which the present wells have been drilled. This department has no means whatever of passing judgment upon the big lime that you speak of. It may or may not be an oil and gas bearing formation.

The occurrence of oil or gas seepages is among the best indications of oil and gas deposits, but drilling for oil and gas on the strength of seepages has often failed because the geologic conditions for the occurrence of oil and gas at depth were unfavorable. Seepages of methane gas in the region from which you write may mean absolutely nothing, and it is suggested that you employ a competent petroleum geologist to advise you.

## MEASURING VOLUME OF GAS

**I want you to give me some advice on how I can fix up a rig to measure the volume of gas wells. I have a rig for measuring the pressure but nothing for volume. If you can't tell me how to rig it up put me in touch with the people that make that kind of instrument—J. V. M.**

Methods of measuring the flow of natural gas from wells follow:

1. Pitot tube.
2. Orifice measurement of small open flow.
3. Low pressure funnel meter.
4. Closed-in pressure drop method.

These methods are described in text books, and articles on the measurement of natural gas and in forthcoming publications of the United States Bureau of Mines. The first three methods are described in the following books:

"Natural Gas," by John Diehl, published by the Metric Metal Works, Erie, Pa.

"Natural Gas," by L. C. Lichty, published by John Wiley & Sons, New York.

The fourth method is described in an article by Claude P. Parsons in The Oil and Gas Journal of December 6 and 13, 1928, and in two reports of investigations by E. L. Rawlins of the United States Bureau of Mines, which will be issued within the next few weeks.

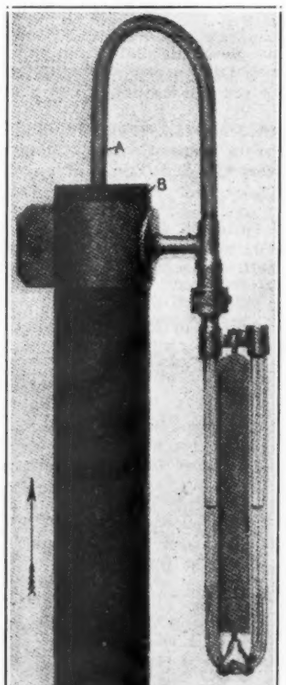



*Figure 1. Pitot tube and manometer attached to casing. (Samuel S. Wyer.)*

The Pitot tube method of measuring the open flow of gas wells is the oldest and simplest way although it involves a serious waste of gas and eventually will be displaced by better and less wasteful methods. A Pitot tube can be made in almost any shop from quarter-inch pipe, glass tubing and the necessary connections as illustrated in the text books and handbooks on natural gas.

It consists essentially of a quarter-inch pipe or tube bent so that it makes a letter U with legs of unequal length. By inverting the U, that is by holding it so that the legs point downward, the short leg can be held over the top of the gas well and in the column of flowing gas. To the end of the leg that remains outside the well there is connected a mercury or water manometer. The pressure exerter in the quarter-inch tube by the gas flow is indicated by the manometer and from the manometer readings the open flow is calculated by the use of tables.

The following is quoted from Lichty's book, "Natural Gas":

"The tube is inserted in the path of the flowing gas so that the opening of the bent end is perpendicular to the gas flow and at a distance in from the inner edge of the pipe of approximately one-third the interior diameter of the pipe. The other end of the tube is connected with a water or mercury manometer, which indicates the pressure in the Pitot tube due to the velocity of the flowing gas. Figure 1 is an illustration of a Pitot tube and manometer.

In making a test the following conditions should be observed: There should be at least a 10-foot length of casing, free from fittings, at the mouth of the well, or where the test is made. The test should not be made in any fitting but in the end of the 10-foot joint of pipe mentioned above. At least two hours before the test, the head on the well should be blown off."

Pitot tubes and Pitot tube tables can be purchased from almost any of the gas well supply houses. In starting your work with a Pitot tube you should obtain the assistance of a man experienced in the use of this instrument until you learn how to use it and make the necessary calculations.

## WHY IS IT CALLED THAT?

### KNIFE EDGE STRUCTURE

The Knife Edge structure, near Tuxpan, in the state of Vera Cruz, Mexico, has been called the most famous single oil-producing area in the whole world. Tamasopo Ridge and Golden Lane structure are other names applied to it. The remarkable narrowness of the structure suggested the appellation Knife Edge, which, used colloquially at first, soon came to be employed generally among geologists and others.

The producing area extends, with slight interruptions caused by doming or local faulting, for more than 50 miles in a general north and south direction. Development of the structure began early in the present century and approximately 900,000,000 bbls. of petroleum has been taken from it.

## COURSES IN ENGINEERING

**I would like names and addresses of schools that teach or give courses by correspondence in petroleum engineering, petroleum geology and general geology, preferably state universities or some of the other better universities, rather than private correspondence schools.—M. Y. W.**

It is not wholly clear whether you want the names of schools which teach (in the classroom) the subjects enumerated and also the names of schools which have correspondence courses in these subjects or whether your inquiry is intended to relate to correspondence courses only. If you want the names of schools that offer courses in petroleum engineering along with the studies, including geology, preliminary to them, you will find a complete list, with other information, in The Oil and Gas Journal of November 1, 1928, "Schools Perfecting Petroleum Courses."

If you want to know about correspondence courses only, as offered by state universities and other schools of similar standing, you might communicate with the University of Chicago, Chicago, and Columbia University, New York, and obtain information concerning their extension courses in petroleum engineering. This department does not know of any universities that conduct regular correspondence courses in petroleum engineering. Some institutions of excellent repute that give instruction by correspondence only have petroleum engineering courses, but your inquiry indicates that you are not interested in these.

## NATIVE SULPHUR IN OIL TANKS

**The scale from a corroding oil tank in West Texas is reported to contain more than 25 per cent of native sulphur in addition to the sulphur that is combined with iron as iron sulphide. Can you explain why this native sulphur should form with the iron sulphide scale?—N. E. H.**

The formation of native sulphur with iron sulphide scale is a common occurrence in fields where hydrogen sulphide gas accompanies the oil. The formation of the sulphur is generally attributed to the partial oxidation of the hydrogen sulphide gas by the oxygen of the air which becomes mixed with the gas in the surface equipment on the lease. The reaction is believed to take place in accordance with the equation:

$$2\,H_2S + O_2 = 2\,H_2O + 2S.$$

This explanation for the formation of native sulphur from hydrogen sulphide gas at ordinary temperatures may or may not be correct. Probably the reactions are much more complex though not thoroughly understood.

Native sulphur is commonly formed from hydrogen sulphide gas in gas compressor systems, cooling coils, pressure regulators, and in oil tanks where hydrogen sulphide gas is present in the casing-head gas and in the oil.

Most of the scale from hydrogen sulphide tank corrosion in the West Texas fields contains 20 per cent or more of native sulphur.

## MORE INFORMATION ESSENTIAL

**Will you please tell me how many barrels of crude oil will gravitate through a 24-inch round pipe, same being placed at bottom of a 55,000-bbl. tank, and travel 300 yards in length?—J. B.**

It is impossible to answer your question because you have not furnished enough information. You should state the gravity, viscosity and temperature of the oil and give a profile and plan of the tank and pipe line hookup. Bends, turns and irregularities in the profile will make a difference in the flow. If the pipe line runs up or down hill, you must state the total difference in elevation between its two ends. Differences in elevation govern the pressure or head under which the oil gravitates. As all of this and possibly more factors such as valve connections will affect the answer, it is suggested that you have an engineer on the ground examine the hookup and make his calculations in accordance with his findings.

# MEN KNOWN IN OILDOM

**Raymond F. Baker**

Starting in with The Texas Company a little over 12 years ago as field geologist, Raymond F. Baker now is holding down the position of chief geologist of that company. In addition to his rise with The Texas Company, Mr. Baker has gained recognition as one of the best informed geologists on the Gulf Coast.

With the exception of a year (1918-1919) spent in the army overseas, Mr. Baker has been with The Texas Company continuously since June, 1916, and since 1923 he has been chief geologist. He joined the company upon completing his studies at Yale University, having been selected by company officials because of his record in school.

Mr. Baker was graduated from Yale in 1912 after receiving his degree in civil engineering and then did three years graduate work in geology at the same university. While doing this graduate work, Mr. Baker spent one season with the United States Geological Survey in research in Montana.

On going with The Texas Company Mr. Baker was sent first to Tulsa, working in Oklahoma and Kansas, where he stayed until he went into the army. Following his discharge from military service, he was transferred to Texas with headquarters in Houston.

# PERSONAL PARAGRAPHS

B. Kurpershoek has returned to the Netherlands after a visit to New York.

* * *

W. Rogers of the Steaua-Romana is on a brief visit to the United States.

* * *

D. P. Demers, director of The Texas Company, in Brazil, has arrived in New York.

* * *

Virgil S. Hockett of Wichita, Kans., has been seriously ill in a hospital but is reported to be recovering.

* * *

Minal E Young, formerly general manager of the New York Oil Company, is on a business trip to Texas.

* * *

J. Mellick Wilcox has moved from Rangoon, India, to join the Anglo-Egyptian Oilfield, Ltd., Suez, Egypt.

* * *

F. W. Burford, president of the Burford Oil Company, spent several days in Tulsa during the week and expects to soon establish his office and home in Pecos, Tex., where the Burford Oil Company's plant is located.

Ted Holmes, for several years past drilling in the Persian fields, is returning to Petrolia, Ontario, on furlough.

* * *

Jack Decker has returned to Denver from Los Angeles. He was one of the pioneer operators in Wyoming.

* * *

E. W. Clark, executive vice president of the Union Oil Company, has been enjoying a needed vacation in Florida.

* * *

M. H. Custer of the tax department of the Prairie Oil & Gas Company, was in Casper, Wyo., several days recently.

* * *

D. A. Sutherland, M.Inst.M.M., etc., is in Egypt visiting the oil property of the Affiliated Oilfields, Ltd., at Towila Island.

* * *

M. J. Gothberg, pioneer oil man in Central Wyoming, has returned to Casper, Wyo., after spending some time in California.

* * *

Bert Emrick has returned on a visit to his home in Pennsylvania, after four years work with the Burmah Oil Company, Ltd.

* * *

Barron M. Fallis, formerly of Mexico, left recently for Venezuela where he will be connected with the Lago Petroleum Corporation.

* * *

Cliff Homan returned to Denver, Colo., recently from Los Angeles where he had been working for the Continental Oil Company.

* * *

Mr. and Mrs. Frank Yerks have returned to the Trinidad fields after spending four months in Petrolia, Ontario, on furlough.

* * *

F. A. Morrison, secretary of the Mason Regulator Company of Boston, Mass., was in Los Angeles recently on a combination business and pleasure trip.

* * *

C. Dalley British Controlled Oilfields, Ltd., is expected in London from his tour of inspection of the company's properties in Venezuela and Trinidad.

* * *

E. C. Hall, president, and T. F. Patterson, director, of the California-Wyoming Oil Co., were recent visitors from their homes on the Pacific Coast to Cody, Wyo.

* * *

J. H. Izard of Denver, Colo., land man for the Marland Oil Company, left recently for California where he will be employed by the same company in the same capacity.

* * *

W. B. Robb, secretary of the Independent Oil Producers Agency, has been in Los Angeles for the past two weeks completing preparations for the regular annual meeting.

* * *

William McKee, field engineer for the National Tube Company, Tulsa, Okla., has returned to his headquarters following a week spent in Houston, Tex., and the Gulf Coast.

* * *

F. L. Rogers, sales manager of Deepwater Oil Refineries, Inc., Houston, Tex., is on a three-weeks' trip over the eastern states calling on jobbers at various distributing points.

* * *

T. Dewhurst, W. Sutton, A. Beeby Thompson and Professor A. W. Nash have been elected to serve on the Council of the British Institution of Petroleum Technologists for the ensuing year.

* * *

Thomas Hornby, of the Anglo-American Oil Company, Ltd., has been appointed chairman of the sales committee of the company, in future to be known as the marketing committee.

* * *

P. E. (Pete) Spellacy of Los Angeles, and Victor Rossetti were recently re-elected president and vice president respectively at the annual meeting of the Mascot Oil Company held at Taft, Calif.

* * *

John Darr, Pittsburgh, Pa., superintendent of the telegraph department, Southern Group of Pipe Lines, accompanied by Mrs. Darr, returned to their home after spending the winter in California. The "Golden West" restored Mr. Darr to good health.

R. M. Sands, president of the Petroleum Exploration Company, appointed assistant to President E. L. Doheny of the Petroleum Securities Company several weeks ago, has entered on his duties.

* * *

W. J. Denholm has been transferred from the Chicago office of the Worthington Pump & Machinery Corporation to the post of assistant to the manager of the Harrison Works, Harrison, N. J.

* * *

John D. Beardsley, traveling auditor of the Ohio Oil Company, has been in Casper, Wyo., for a few weeks on his way east to visit Ohio offices after a trip to the company's headquarters in California.

* * *

A. G. Dana of Parco, vice president and manager of the Prairie Oil & Gas Company of Wyoming; O. E. Garretson, treasurer, and W. P. Petry, also of Parco, were recent visitors to Casper, Wyo.

* * *

T. A. Pedley of Denver, Colo., has resigned as treasurer of the Midwest Refining Company with which he had been associated for 10 years. Mr. Pedley is resigning to look after his large personal interests.

* * *

Mr. and Mrs. Eric Hussey, of Petrolia, Ontario, have left for India after a six months' furlough in Canada. Mr. Hussey has taken a three-year drilling contract and will be located at Khaur, Punjab, India.

* * *

A. S. Summers, of the Carter Oil Company, who is a well known scout in all Oklahoma fields, has been transferred to Wichita Kans. Mr. Summers has been scouting the Cushing district for the past several years.

* * *

T. M. Magee and sister, Mrs. Mary Bovard, have returned to their home at Keister, Pa., after spending the winter at Laketon, Fla. Mr. Magee is a retired superintendent of the Southwest Pennsylvania Pipe Line Company.

* * *

William A. Moulton, vice president of the Washington Park National Bank, Chicago, has been visiting relatives in Tulsa and obtaining first hand information about business conditions in the Mid-Continent district during the early part of April.

* * *

W. A. Miller, Jr., general manager of the Illinois Pipe Line Company with headquarters at Lima, Ohio, is at the Casper, Wyo., offices of the company for a short time conferring with P. W. Hennessey, general superintendent of the company in the Rocky Mountain region.

* * *

G. H. Cronin, junior petroleum technologist, has been transferred from the Casper, Wyo., offices of the mineral leasing division of the United States Geological Survey to the offices of the survey at Cushing, Okla. Mr. Cronin had been at Casper for about two years.

* * *

C. G. Reid has resigned as chief engineer of the Union Oil Company's tanker, Santa Maria, and has left the sea to become acting deputy shipping commissioner at Los Angeles Harbor. He joined the staff of Captain John A. Rylander with offices at San Pedro, Calif.

* * *

K. D. Pardee, who was in West Texas fields during the time of the boom at Breckenridge, is now assistant to General Manager McCombs of the Turkish Petroleum Company. He is a brother of H. N. Pardee, assistant division manager of The Texas Company at Fort Worth.

* * *

J. S. Sidwell, assistant general superintendent of the land department of the Prairie Oil & Gas Company, has been in Oklahoma City, Okla., the past week in connection with the closing up of the recent purchase of the T. B. Slick oil interests by the Prairie Oil & Gas Company.

* * *

In addition to Sir Henri Deterding, representing the Royal Dutch-Shell interests at the conference in New York Francis E. Powell, representing the Anglo-American Oil Company, Ltd., and George H. Coxon, representing the Anglo-Persian Oil Company, were in this country. William Frazer, deputy chairman of the latter company, was unable to come owing to the absence of the chairman, Sir John Cadman in Persia.

# EQUIPMENT AND SUPPLIES

## ALCO TOOL STARTS ON PROGRAM OF EXPANSION

An expansion program in sales relations, marketing facilities and manufacturing processes has been announced by Hubert E. Allen, manager of the Alco Oil Tool Co., Compton, Calif. Rumors that the concern was to be purchased by a

H. E. Allen

group of capitalists operating a large corporation were amiss, according to the officials of the Alco Oil Tool Co.

Promotions and additions to the staff are announced. Loyd Defenbaugh, formerly in charge of field service operations, has been appointed assistant in charge of Alco sales throughout the world. Fred Bennett, formerly in the service department with Mr. Defenbaugh, has been promoted to field salesman. Additions to the field service force include C. L. Flanagan, recently with the Continental Oil Co. at Oil City, La., as field superintendent, and M. L. Chaney, formerly with the H. C. Smith Manufacturing Co., as a field service man. Mr. Chaney is now in Ventura, Calif., acting as a field salesman.

Within the next three months important announcements will be forthcoming from the Alco Oil Tool Co., according to officials of that concern.

### TAKES UP BELT SLACK

A new method of overcoming the jerky action of gas engine belts is offered in the Cantilever-spring Beltslacker, manufactured by Harry M. Perry, Los Angeles, Calif. This slack belt drive equipment takes up slack and lets it out for shrinkage, caused by load and temperature changes. Adjustable tension of the Cantilever spring is provided by clamping it to a split sleeve which can be rotated on the hinge bar and clamped in any desired position. Two or more springs are used on very large drives. As the spring tension decreases the belt wrap increases.

### OPENS DIVISIONAL OFFICE

The Halliburton Oil Well Cementing Co. has established divisional headquarters at 609 Perrine Building, Oklahoma City, Okla. Operations of the company throughout the greater Seminole area in Oklahoma as well as the entire northern part of the State will be directed from the Oklahoma City office.

### NEW SWING FRAME GRINDER

The Kinney swing frame grinder, manufactured by the Kinney Iron Works, Los Angeles, Calif., is especially adapted for oil tool dressing, rail and frog grinding, snagging in iron and steel foundries, billet grinding, etc. The motor is connected directly to the wheel through a flexible coupling and heavy shaft. Both ends of the shaft are mounted in heavy dust-sealed ball bearings. The motor also is equipped with dust-proof ball bearings. The wheel runs at right angles to the frame. The operator therefore can see his work at all times. Danger from a broken wheel flying in his direction is minimized. The wheel guard may easily be rotated so that either side of the wheel is exposed.

### NOW THEY READ DIRECTIONS

A way of really getting users to read directions about their engines is being used by the Waukesha Motor Co., Waukesha, Wis. A booklet, in the form of an insurance policy, marked "Read Your Policy," is attached to each engine. It impresses on the user's mind more strongly than an ordinary direction folder the most important features of his engine to remember.

### NEW VALVE UNIT PROVIDED

An improved hardened and ground valve unit will be provided hereafter with all Boyer riveting hammers, unless otherwise ordered, according to an announcement of the manufacturer, the Chicago Pneumatic Tool Co., New York, in a bulletin just issued. The improved Boyer valve unit is interchangeable with the original Boyer unit. Only when specifically ordered will the soft valve block be provided.

### PARKERSBURG HAS AIR SIGN

Co-operating with the Federal Government in furthering the cause of air navigation, the Parkersburg Rig & Reel Co. has placed on the roof of its steel derrick plant in Parkersburg, W. Va., an air sign, in letters 8 feet high, showing the word "Parkersburg," with an arrow pointing toward the local airport. The sign is made according to government specifications. While there has been no official notice that Parkersburg would be on an air mail route, it is regarded as likely that it will be. Coming into Parkersburg from the east necessitates crossing mountainous country, and this sign will aid aviators in locating their course.

## NEW OFFICERS NOW IN CHARGE OF PITTSBURGH VALVE

New officers have taken over the management of the Pittsburgh Valve, Foundry and Machine Co., Pittsburgh, which manufactures valves for varied uses, fabricated piping and power house equipment generally.

The additions to the board are C. A. Anderson, Jr., formerly vice president and sales manager, now president and director of sales, and A. V. Wadsworth, formerly secretary-treasurer and manager of the Westcott Valve Co., who becomes vice president and general manager.

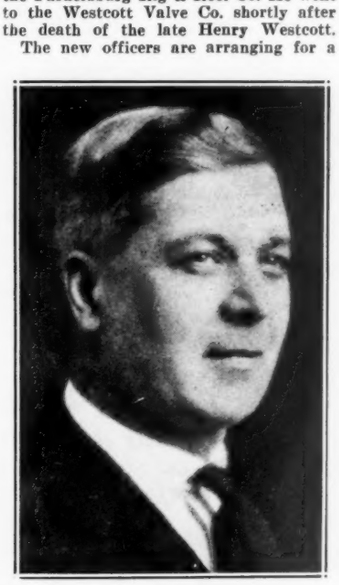
Mr. Anderson has been with the company over 20 years. He was for a time in charge of the New York office, later establishing the company's office in Philadelphia. In 1922 he returned to the Pittsburgh office as general manager of sales, and since 1921 has been vice president in charge of sales.

Mr. Wadsworth began in 1890 with the National Transit Co. in Oil City, Pa. Later he was with the Buckeye Traction Ditcher Co. of Findlay, Ohio, where he was largely responsible for the introduction of ditching machines for pipe line work and developed some of the first pipe screwing machines. Later he built up the Pomeroy Machine Co. at Pomeroy, Ohio, which was absorbed by the Parkersburg Rig & Reel Co. He went to the Westcott Valve Co. shortly after the death of the late Henry Westcott.

The new officers are arranging for a much more aggressive policy in the Mid-Continent and coastal oil fields.

Blake V. Fisher, for several years with Goulds Pumps, Inc., and for the last three years representing Westcott in Texas, will be district manager with offices in Dallas, Tex., and will have representatives in Tulsa, Shreveport, Houston and New Orleans. The eastern division will be in charge of W. H. Arnold, long connected with Pittsburgh Valve, Foundry & Construction Co.

C. A. Anderson, Jr.
President and Director of Sales



A. V. Wadsworth
Vice President and General Manager

## GETS U. S. PATENTS FOR ASBESTOS-CEMENT PIPE

The Johns-Manville Corp., New York, has acquired from Italy the United States and Canadian rights for the manufacture and distribution of Transite seamless pipe, made of asbestos fiber and Portland cement.

"The process for manufacturing this pipe," says William R. Seigle, chairman of the Johns-Manville board of directors, "produces a dense, close-grained material which is readily cut, tapped or threaded with the same tools and in the same manner as iron pipe.

"The principal markets calling particularly for such pipe include the general building field and a great variety of industries, such as petroleum, chemical, metallurgical and mining. Railroads and public utilities also constitute large markets. While entirely new to America, this pipe has been in use in Europe for a number of years, where its durability under various conditions of soil and for a great variety of purposes has been thoroughly established."

## OIL-FEEDING SYSTEM MADE BY OXWELDING

The superintendent of an oil refinery in the Southwest has designed and had manufactured by oxyacetylene welding, a lubricator to supply a group of five steam pumps, says the current issue of Oxy-Acetylene Tips, published by the Linde Air Products Co., New York. This lubricator works exactly like the smaller types found on most steam pumps. Formerly each pump had a separate device which, on account of its small size, had to be filled every day. The new all-welded lubricator feeds all the pumps at one time and has to be filled with oil only once every month. This saving in attendance was the reason for replacing the old system of oiling.

### TRADE LITERATURE RECEIVED

The merits of copper-bearing steel pipe are told in a 12-page bulletin, printed in colors, just issued by the National Tube Co., Pittsburgh.

"Oil Evaporation Losses and Their Prevention" is the subject of an informative article by H. C. Boardman in the current number of The Water Tower, published by the Chicago Bridge and Iron Works, Chicago.

Various uses of cement in building projects are described and illustrated in Bulletin No. 23, issued by the International Cement Corp., New York.

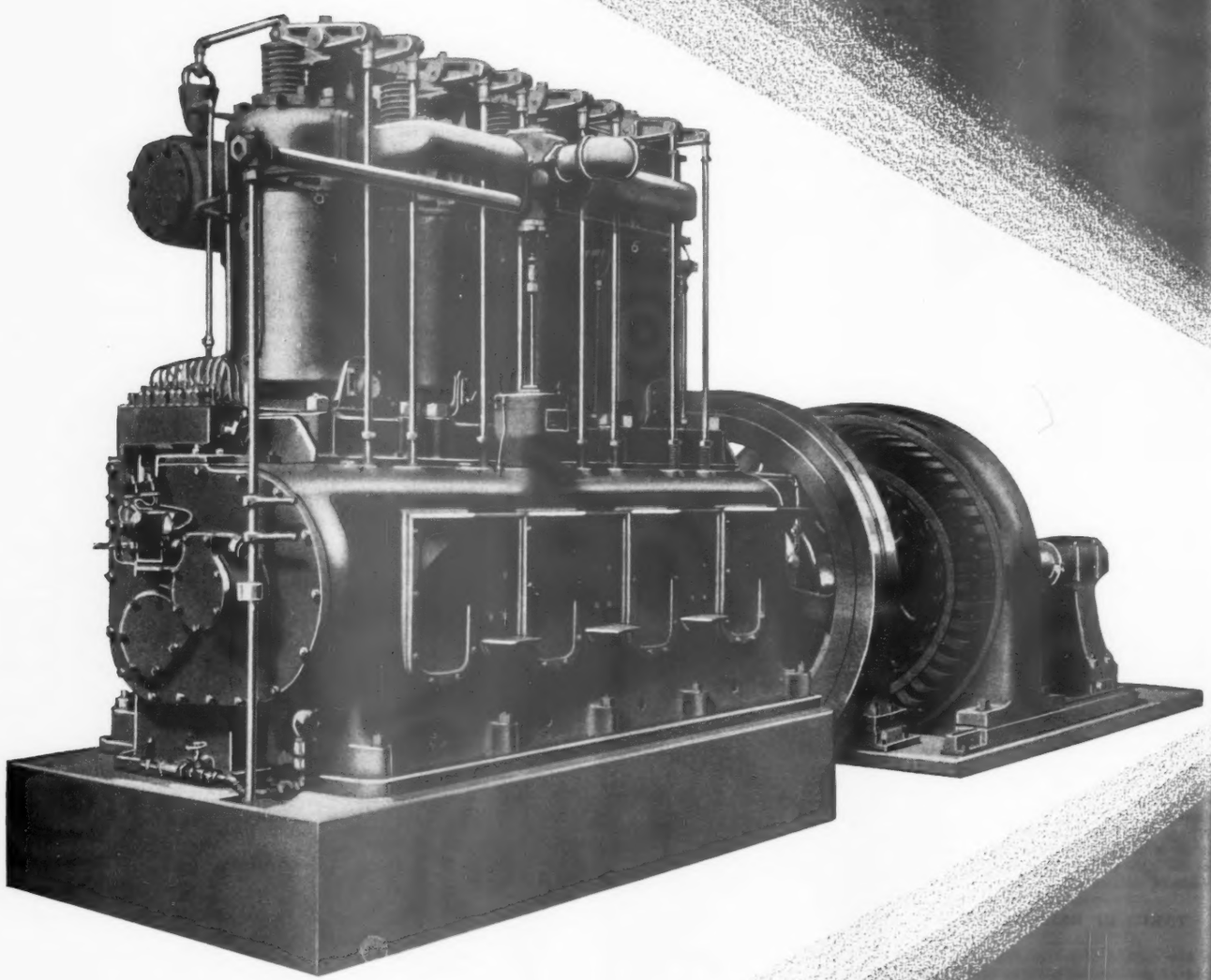
Roller-bearing rotary machines and accessories are the subject of Bulletin No. 32, issued by the Emsco Derrick and Equipment Co., Los Angeles, Calif.

Among articles in the current issue of Heat Engineering, published by the Foster Wheeler Corp., New York, is one on "Improved Floating Head Construction for Heat Exchange Equipment."

Purification of fuel and lubricating oils by use of the Sharples Super Centrifuge is described in a new catalog issued by the Sharples Specialty Co., Philadelphia, Pa.

### BROWN ISSUES DATA BOOK

The Brown Instrument Co., Philadelphia, has published a 48-page Power Plant Instrument Data Book, presenting 105 applications of instruments to the steam power plant for measuring temperatures, pressure flows, liquid levels and speeds. The purpose of the volume is to provide data from which a suitable plan of instrument equipment covering most operating needs may be worked out for any steam plant.



LONG LIVED
**SIMPLE TO OPERATE**
STANDARD SIZES
UP TO 540 B.H.P.
FOUR CYCLE FUEL ECONOMY
**LOW INSTALLATION COST**
LOW COST ELECTRIC POWER

# HOPE
## VERTICAL
# GAS ENGINES

FOR all auxiliary power units in main line and booster stations—in gasoline recovery plants—for power and lighting plants—Hope vertical gas engines are establishing new records for sheer economy and rugged dependability.

Hope Verticals are available in standard sizes from 60 B. H. P. to 540 B. H. P.

Many engine buyers prefer the Hope vertical because it is easily set up, easily moved. Other buyers like Hope's extreme compactness and the fact that it requires such a small floor space and foundation. Still other buyers are *sold* on the oil-tight, dust-proof features and on Hope's smooth, quiet, almost vibrationless operation.

No matter what particular features influence *your* choice of a Hope Vertical Gas Engine, you are perfectly sure of getting a high-duty unit built for continuous operation at minimum cost.

The fact that all Hope Engines are now Cooper-built makes your choice doubly safe.

*Hope Engineering Company will continue to represent The C. & G. Cooper Company in the sale of Hope Engines.*

*Offices at*
Mt. Vernon, Ohio, 149 Broadway, New York, N. Y.
202 Scanlon Bldg., Houston, Texas, 603 Mayo Bldg., Tulsa
945 Western Pacific Bldg., Los Angeles, California
1510 Santa Fe Building, Dallas, Texas

THE C. & G. COOPER COMPANY
MOUNT VERNON, OHIO
*630 E. 61st Street, Los Angeles* *1116 Magnolia Bldg., Dallas*
*615 Kennedy Building, Tulsa*

# NOW BUILT BY
# COOPER

# Natural Gas Developments

## OWENSBORO EXPECTS TO GET GAS SUPPLY

OWENSBORO, Ky., Apr. 13.—The natural gas committee of the chamber of commerce, which has been working diligently to bring natural gas into Owensboro, believes the time is not far distant when their labors will be rewarded. Two recent announcements strengthened the belief.

C. E. Curry, of the Wood Oil Co., announced that his company, which owns a large number of gas wells in the Tri-County oil and gas field, has contracted to sell the entire gas output of its properties to the Continental Gas Service Corp. of Tulsa, Okla. This announcement was confirmed by M. V. Davies, representative of the corporation, who said a survey is being made preparatory to laying gas lines from the field to Owensboro and beyond, making available at the city limits a supply of gas which he says will be all this city would require.

At the same time announcement was made by representatives of Joseph Greenspon's Sons Iron & Steel Co., of St. Louis, that this company stands ready to enter Owensboro with natural gas from the local field if the city will grant a franchise embodying a rate of $1 for the first 1,000 cubic feet, 65 cents per thousand for the next 4,000 feet and 60 cents per thousand for all in excess of 5,000 feet per month to any customer, such gas to contain 1,000 B.t.u. per foot.

The sale of the Wood Oil Co.'s gas to a pipe line company contemplates, it is understood, that steps would be taken by another company as soon as natural gas is made available at the city limits, to procure a franchise to do business in the city, purchase a supply from the Continental and establish lines in Owensboro for its sale to domestic and industrial consumers.

The Greenspon interests announce they will begin laying pipe to Owensboro from the field within 10 days after the city has granted a franchise and a survey has been completed showing the consumption expected.

### HELIUM YIELDS NEW COLORS

A new discovery of scientific importance in connection with helium has just been announced by Dr. J. S. Foster of McGill University, Montreal. Doctor Foster states that in the observation of totally new colors in the spectrum of helium gas lies the solution of a long-standing problem in physics. Doctor Foster of McGill physics department successfully tackled this problem, first attempted by Professor Stark, Nobel prize winner, in 1915. The problem concerns the joint action of electric and magnetic forces on atoms which are emitting light.

The investigation has been carried on to obtain more information about the way in which atoms are constructed and the laws they obey. The new helium colors observed by Doctor Foster are produced scientifically by a method which has now been brought under experimental control for the first time. The source of light is subjected to the joint action of both electric and magnetic forces, acting at right angles.

### NEW MAINS FOR BILLINGS

CASPER, Wyo., Apr. 15.—New distribution mains in Billings, Mont., will be laid this spring by the Billings Gas Co. This will do away with the present system; the new mains to be 6-inch while the present are 3½-inch. The Ohio Oil Co. is laying a 10-mile line to the well on Dry Creek Dome and this well will be held as a reserve in case the Elk Basin Field supply should fail.

## HARDIE VICE PRESIDENT OF DIXIE GULF GAS CO.

HOUSTON, Tex., Apr. 15.—Recent changes in the gas transportation subsidiaries of the United Gas Co. of Houston include the election of M. A. Hardie, vice president and general manager of the

M. A. Hardie

Houston Gulf Gas Co., to the additional position of vice president of the Dixie Gulf Gas Co.

Mr. Hardie will take charge of all properties of the Dixie Gulf Gas Co. in Texas from Waskom south. B. A. Hardy, vice president of the Dixie Gulf Gas Co., who has had charge of all properties of the company, has been transferred to Shreveport, La., where he will look after the Louisiana division solely.

This change has been made necessary because of the rapidly growing gas transportation business in North Louisiana and proposed projects from North Louisiana fields to other states. Under the new arrangement, a state dividing line has been drawn whereby the Texas properties of the United Gas Co., including those of the Houston Gulf Gas Co. as well as the Dixie Gulf Gas Co., will be under the direction of the Houston office and other properties will be operated out of Shreveport.

The Houston Gulf Gas Co. owns and operates a gas line from Southwest Texas fields to Houston. The Dixie Gulf Gas Co., a sister company, operates a gas line from Northeast Texas to Houston and Texas with a system, which connecting with this line at Waskom, tapping nearly all the important gas fields of North Louisiana.

The transfer of B. A. Hardy is a home returning trip for him as he was transferred from Shreveport to Houston less than a year ago.

### CALIFORNIA GAS OUTPUT

Thirty-five per cent above the amount and value of the 1927 total, California's production of natural gas, practically all of which was confined to the southern half of the state, reached a new high level in the history of the industry during 1928.

Estimated to have attained 350,000,000,000 feet, with an approximate value of $31,000,000 in the year just closed, the production was comparable to 224,686,940,000 feet and $20,447,294 during the previous 12 months.

### GAS CHEMISTS HANDBOOK

Gas Chemists Handbook for 1929, published by the American Gas Association, 420 Lexington Avenue, New York, contains 795 pages and is freely illustrated. It has been revised by the committee on analysis, tests and editing made up of A. F. Kunberger, chairman; W. H. Fulweiler, N. F. Prince, C. A. Lunn and C. C. Tutweiler. It treats of manufactured gas only and incorporates as far as possible the methods of analysis and tests adopted as standards by the American Society for Testing Materials.

The handbook takes up the subjects of raw materials, products of gas manufacture, impurities in gas and miscellaneous subjects. Under raw materials coal and coke, gas oil and purification material are given attention. Gas, ammonia, light oils and light oil products, tar from water gas and coal gas, and cyanogen are separately treated under the general head of products. In the miscellaneous section of the book the subjects of water, paint and paint materials, lubricants, solder, bearing metals, brass and bronze, pipe deposits, refractories, cement, lime and ferrous metals each is given a place.

The entire work is based, its compilers say, on the most recent available data.

### UTILIZATION OF NATURAL GAS

The utilization of natural gas which is going to waste in localities where the gas cannot be transported for use as fuel or returned to the sands to increase oil production is a problem of great importance, the Department of Commerce points out. The United States Bureau of Mines has undertaken studies dealing with the technology and economics of possible processes for converting natural gas into valuable products which can be transported to their respective markets economically. Liquid or easily liquefiable products such as formaldehyde, ammonia, methanol, and motor fuel can be made from natural gas. The studies will be directed to determine which of these products can be produced most profitably at the locations where natural gas is available.

### GAS FOR PITTSBURG, TEXAS

PITTSBURG, Tex., Apr. 13.—The city council of Pittsburg granted a franchise to the Arkansas Natural Gas Co. of Shreveport for the construction of a gas system at Pittsburg. The company has 30 days in which to accept the franchise and six months in which to start work if the franchise is accepted. The same company has been granted franchises at Mount Pleasant and Mount Vernon. Representatives of the company have just completed a survey of Pittsburg.

### BRENHAM GETS NATURAL GAS

BRENHAM, Tex., Apr. 13.—A supply of natural gas is now available for Brenham, the Texas Cities Gas Co. having made the change from manufactured to natural gas. A gas pipe line from the Humble Oil & Refining Co. oil and gas field at Raccoon Bend, a distance of 22 miles, has just been completed by the Murchison Oil Co. at a cost of about $100,000.

### WILL DRILL IN KENTUCKY

MADISONVILLE, Ky., April. 15.—Shippey, Madden & Parish Gas Co. of Kansas City, Mo., will drill 10 oil and gas tests in Christian and Hopkins Counties, the first to start this week. The company has secured leases on 11,000 acres of land in Hopkins County and several thousand acres of oil and gas rights in Christian County.

## TURKEY FEAST DAYS BOOST GAS DEMAND

Thanksgiving Day and Christmas Day, the great national home days for Americans, in which the woman of the house matches her skill against the best traditions in culinary art constitute the two national holidays during the calendar year when the demand for gas reaches its peak, according to the American Gas Association.

The heaviest demands on these two days come at about the same time, from 10 o'clock in the morning, when the turkey and "fixin's" go in the oven and on the top burners of the gas range, until 2 o'clock in the afternoon, when the turkey comes out of the oven with everything that goes with it.

Reports received by the association fail to show which of the two days consumes the greatest amount of gas. Some companies state that Thanksgiving is by far the biggest gas-using day of the year. Other companies say that Christmas Day is far ahead in the lead.

Christmas Day, 1927, broke all records in gas consumption for a single day in Philadelphia. In reporting on this fact a Philadelphia company says:

"In the days when gas light was in general use the biggest demand of the year invariably came on Christmas Eve, and the gas men knew that the folks of the city were awake later than usual that night. Now the heaviest gas consumption comes during the dinner period, between 11 a. m. and 2 p. m."

The employes of the gas companies, particularly those attached to the engineering end, get little comfort out of our two greatest gas-consuming holidays. These men must go on duty early and stay late, taking hourly readings of gas pressure and gas sent out, and maintaining a vigilant watch over every piece of machinery making up the complicated plant structure.

### LEXINGTON GAS RATE

At a hearing of the gas rate controversy before the State Railroad Commission recently several witnesses were placed on the stand by the city of Lexington, Ky., in an attempt to show that the gas rate in Lexington should not be over 40 cents retail. Lucian Beckner, geologist with the Louisville Gas & Electric Co. of Louisville, made the statement that there is enough gas in eastern Kentucky to supply the entire State for 100 years. The gas company has completed its testimony and it is thought that several months will be consumed by the city in delivering its side of the case. The 10 per cent impoundment fund amounts to $425,000. If the city succeeds in reducing the gas rate, this amount will be distributed among those who paid it, but if not, the gas company will retain the money.

### ST. THOMAS GAS PROPOSITION

CHATHAM, Ontario, April 13.—The Central Pipe Line Co. of Chatham, headed by R. L. Pattinson, has made a written proposition to supply natural gas to the city of St. Thomas. It is proposed to deliver natural gas from the Vienna and Richmond fields in Elgin County to St. Thomas at the city limits, distribution to be handled by the municipal plant which would use the available natural gas to supplement its artificial gas supply. A rate of 60 cents is proposed, and if the proposition is accepted, pipe line construction will commence immediately, in addition to which some new drilling in Elgin County will probably be undertaken.

# Magnetometer Survey of Louisiana

## Relation Shown Between Magnetic Anomalies and the Oil and Gas Producing Areas. Northern Section Interesting

By L. Spraragen

As stated in the first part of this article which was published on pages 103 and 110 in the April 4 issue of The Oil and Gas Journal, the object of the article is to point out some of the magnetic anomalies revealed by a magnetometer survey and to call attention to the relation between the magnetic anomalies and the oil and gas producing areas, also to study if the magnetic reliefs are in any way related to the actual geologic structure.

Plate 3 shows the principal oil and gas fields of the State.

Profile 4 shows the production associated with a high.

Profile 6 shows four producing fields associated with magnetic highs and a fifth midway between a high and low.

Profile 7 shows six producing areas closely allied with magnetic highs and one in proximity to a magnetic low.

Profile 8 shows two producing areas related to magnetic highs and one affiliated with a low.

A summary of the foregoing then indicates that of the 26 producing areas considered 19 are found associated with magnetometer highs, 4 are associated with lows and 3 occur between magnetic highs and lows.

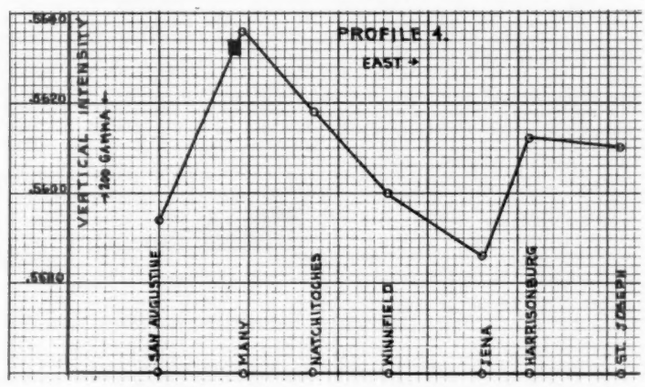
### The Sabine Uplift

From the paper by Sidney Powers in the A.A.P.G. Bulletin, Vol. 4, No. 2, 1920:

"The Sabine uplift is an area approximately 80 miles long and 65 miles in maximum width, situated in the northwestern corner of Louisiana and in the adjacent portion of Texas. . . ."

". . . Structurally the area is extremely complicated when examined in detail, but relatively simple when examined as a whole."

"Judged as a whole, the Sabine uplift is a large, flat-topped dome from which the dip is quaquaversal at a rate of 20 to 150 feet to the mile or, roughly, one-sixth degrees to 2 degrees. Two conspicuous axes, one northwest southeast, the other at right angles, lend irregularity to the outline of the dome. The surface of the uplift is undulating with alternating rythmic anticline and synclines elongated northeast southwest and compressed in the opposite direction. Several domes of large size, some with steep sides, some with broad tops and gently dipping sides are found on the uplift."




"Figure 4 shows the outline of the uplift as indicated by the contour on the Nacatoch sand 1,000 feet below sea level. The shape of the uplift is essentially as drawn, but the bounding line is purposely made as smooth a curve as possible, and it therefore crosses several folds on both east and west sides."

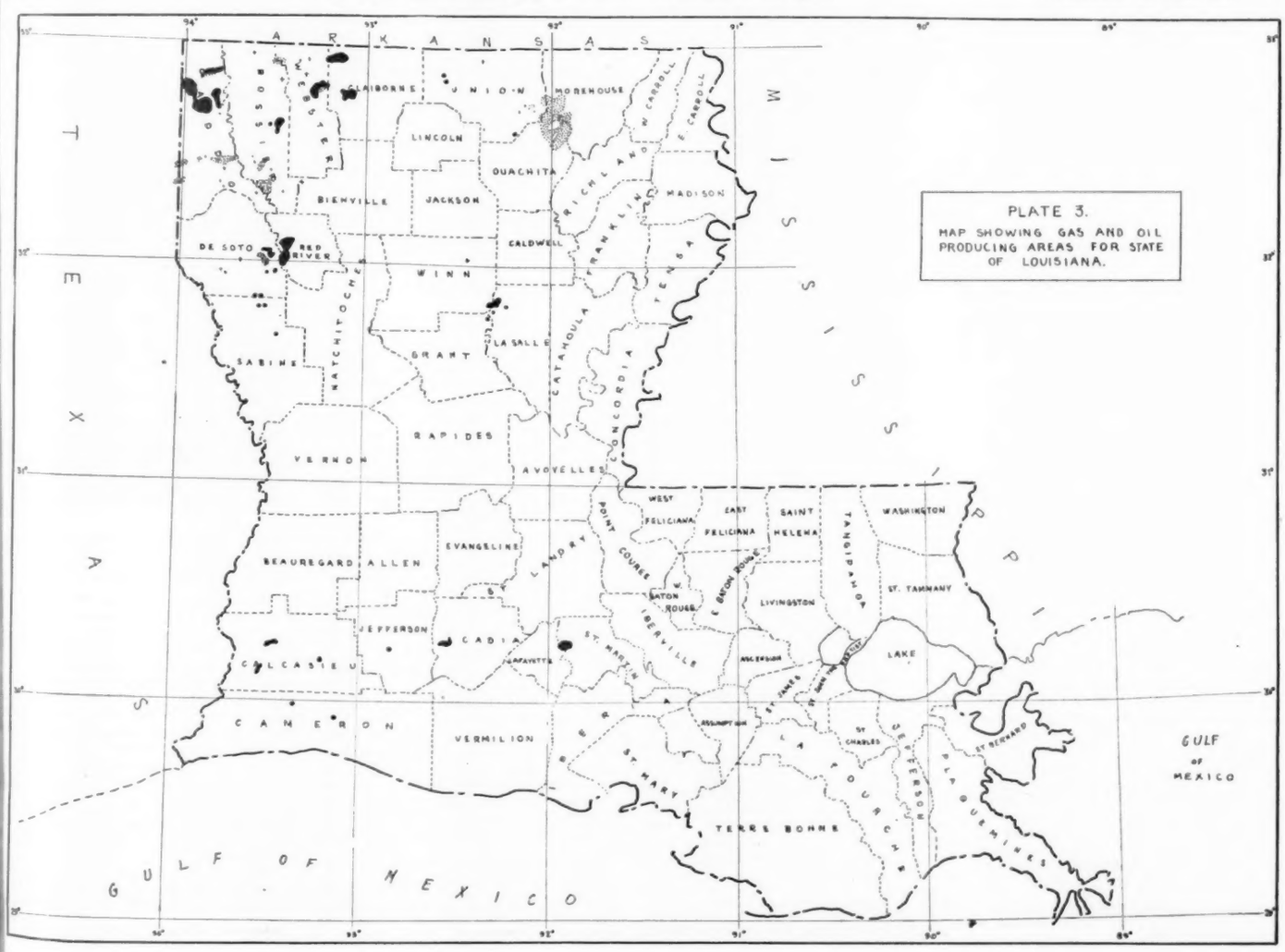
". . . No uplift comparable in size to the Sabine uplift is known in the Coastal Plain. Folds in Alabama are well known, but they are parallel east west anticlines. The Preston anticline, which crosses Red River between Oklahoma and Texas, is a single, long anticline which apparently reflects a buried area of geanticlinal folding. Moreover, there is no area of folding explored at the surface nearer to the Sabine uplift than the Ouachita Mountains in Arkansas, 90 miles north."

### Production of Petroleum

From paper by Sidney Powers on Sabine uplift:

"The first successful oil wells in North Louisiana were drilled in 1904, and as a result of the discovery of oil, the Caddo Field was developed. Maximum production at Caddo was in 1913. Wildcat drilling led to the discovery of gas at Shreveport, Cedar Grove and Elm Grove in 1912 near the center of the uplift. Gas was discovered near Naborton de Soto Parish in 1912, and oil was found in the same region in 1913. The De Soto Field was

(Continued on Page 96)



# Recovery Methods in Control of Water

## Repressuring, Gas Lift and Dewatering Are Described in Discussion of Practices in Stopping Encroaching Water

By R. Van A. Mills
*Petroleum Engineering Editor*

In previous articles upon field methods of water control (see The Oil and Gas Journal of September 20, 1928, page 33; February 14, 1929, page 40; and March 7, 1929, page 50) the value of gas pressure as a medium for water control was emphasized. Wells seldom go to water during their flush production periods when they are flowing under the propulsive force of expanding gas but as the gas pressure is dissipated and water pressure becomes the chief propulsive force there is an inevitable tendency for the encroaching water to drown out the wells. The best method of water control is to conserve as much of the natural gas

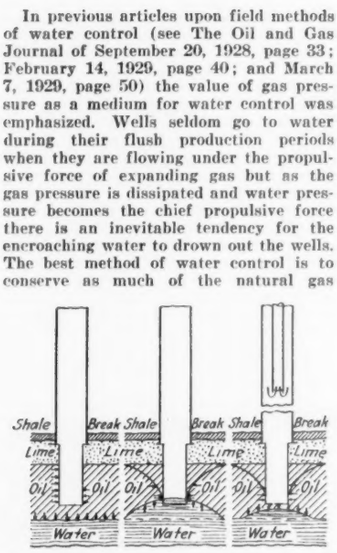



*Figure 1. Diagram illustrating water coning effects in gas-lift operations. The left section shows the arrangement of oil and water before water coning takes place. The center section shows water coning caused by excessive rate of production. The right section illustrates the depression of a water cone by back pressuring with the gas lift. (After Bennett and Sclater.)*

pressure in the reservoir beds as is consistent with the profitable production of oil under either competitive or co-operative methods. It is next in order to consider what degree of water control can be accomplished by restoring the gas pressure where it has been depleted.

### Repressuring

In fields where gentle structure prevails, as in the Appalachian region, where the average dip approximates 50 feet to the mile, it has been reported that the first effect of repressuring is often to increase the production of both oil and water.

The effect of repressuring has been described by J. O. Lewis[1] as follows:

"The forcing of air through the sand usually increases the volume of water produced with the oil, but this increase is reported to be proportionate to the increase of oil, so that the ratio of oil and water produced remains approximately the same. In some wells the volume of water made fluctuates, and instances have been reported where a well will make water almost exclusively for a while, to be followed by a period when little water accompanies the oil. Complaint seldom has been made by the users of the process because of the increase in water, as it has been proportionate to the increase in oil.

"The only serious complaint made was where the process was used near Lima, Ohio, in wells producing from the Trenton limestone. Producers in this district report that normally 30 to 40 bbls. of water accompany each barrel of oil produced by the ordinary methods. When the air was forced through the sand the volume of water became so great in many wells that the users became discouraged and stopped the process. Whether the process will affect other fields similarly, where large quantities of water are present, is not known because the character of the oil-producing rock, a porous limestone, is not the same as for oil sands."

In the North Central Texas oil fields one of the large oil companies has obtained good results in reducing the water production and at the same time increasing oil production by repressuring. In one field a company applied gas at 190 pounds gauge pressure at the key wells and held 45 pounds per square inch back pressure at the producing wells on an 80-acre lease with 18 producing wells and 3 pressure wells. This reduced the water production on the repressured lease from 225 bbls. per day to 35 bbls. per day within three months after repressuring was started. The oil production gradually increased during this period from 463 to 494 bbls. A decline in the rate of production amounting to 110 bbls. of oil per day was recorded during the month preceding the start of repressuring operations so that the actual increase in daily production over that which would have been obtained without repressuring was approximately 142 bbls.

As the production of water on this lease decreased, it is interesting to note that the water production on an adjacent lease increased correspondingly. The water was forced over onto the neighbor's lease, where lower pressures prevailed. This neighbor soon started repressuring operations on a co-operative basis. This resulted in forcing the water still further through the sand to a third lease where repressuring has not yet been started. The water was continually forced toward the low-pressure areas in the sand. Unfortunately, the structural relationships in this field are not available to the writer.

It is evident that to be most effective as a means of water control the pressure

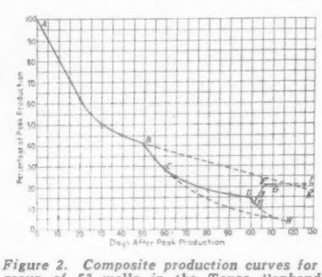



*Figure 2. Composite production curves for a group of 53 wells in the Texas Panhandle Field, showing the beneficial effects of putting the wells on the gas lift as explained in the text. (After Bennett and Sclater.)*

in a sand should be raised and maintained as uniformly as possible throughout the entire productive area. Otherwise one area may be benefited or protected by increasing the encroachment of water on neighboring leases. There are cases on record where repressuring operations with a few pressure wells on large productive structures have so increased the water in nearby wells as to bring about the abandonment of the repressuring operations. In one of these cases a single company operated the entire structure but could not afford to repressure all of it. Consequently, a test was made with one pressure well close to the oil-water contact. This merely forced the water away from the key well to the producing wells in the immediate vicinity and the project was abandoned. The time will probably come within a few years when in cases of this kind it will be profitable to combine dewatering and repressuring operations for an entire structure.

Further information upon water control by repressuring has been furnished the writer by E. H. Griswold* of the Marland Production Co., who is quoted as follows:

"In repressuring sands to retard the advancement of edge water, we have one example where we have held the water production of the producing wells constant and increased the oil production. In another instance the water production in the producing wells was increased without affecting the oil production. We believe that the different effects obtained in these cases was due to the relative structural location of the key wells and

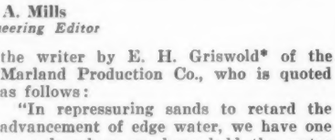



*Figure 3*

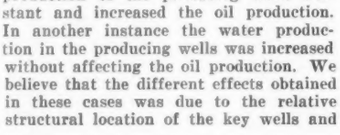



*Figure 4*

producing wells. In the former case the key wells were located on the flanks of the structure along the line of edge water encroachment. In the latter case the key wells were located on top of the structure.

"In repressuring a limestone producing formation the key well was located on the flanks of the structure similar to the first example above but negative results were obtained as the water production of wells up structure was increased without increasing the oil production."

E. O. Bennett[2] is quoted on the effects of repressuring upon water encroachment as follows:

"In our repressuring operations in the Turberville, Harmel and Cook Ranch Pools in Texas, the injection of gas under pressure has served to almost entirely eliminate water which had previously been entering a great many wells. Another place where the use of artificially imposed gas pressure has been very successful as a means of water control is the Seal Beach Field of California, where gas was injected well down on the flank of the structure near the oil-water contact line. This greatly reduced the water encroachment and yielded a large production of oil that would otherwise have been entrapped by encroaching edgewater and thus rendered unrecoverable."

In describing the effects of repressuring three leases, A, B and C, during the flush production stage of the Turberville Pool in Archer County, Texas, E. V. Foran[3] makes the following statement:

"An increase in bottom water was observed following the rapid decline in production on both the B and C leases. Soon after the beginning of repressuring operations on B lease the water disappeared entirely in some of the wells and in the other cases further encroachment was entirely arrested. During the period from June, 1927, to January, 1928, there was no increase in water production from this lease. The C lease shows a similar history with respect to water."

The value of early repressuring as a means of water control can not be too strongly emphasized.

Several cases have come to the writer's attention where late repressuring operations failed to retard the encroachment of water. In most of these there were many abandoned and poorly plugged wells that admitted water into the oil sand under such pressure and in such volume that it could not be held back by the air pressure applied. In one Oklahoma field gas was forced into the Wilcox sand at a depth of 4,000 feet and close to the oil-water contact. This so greatly increased the updip movement of water to nearby wells that the project was abandoned. The high pressure edge water moved away from the repressured area to drown out producing wells in the close-by updip areas that were not repressured.

Water control by repressuring has not been consistently successful because of the wide variation in both the field conditions and the methods employed. Early repressuring and pressure maintenance throughout an entire productive area, especially if the productive area be located on the upper part of a well-defined structure, should give the best results. So-called repressuring that does not actually sustain or restore enough pressure throughout the productive area to hold the water away from back-pressured wells, can be of little value as a means

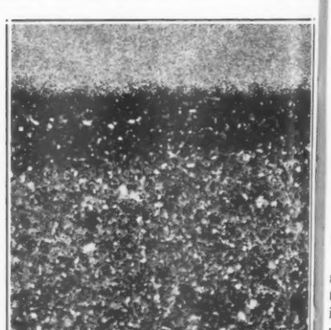


*Figure 5. Photograph showing mode of retention of oil in a water flooded sand. Note both the globules of oil in the interstices and the films of oil around the sand grains.*

of water control throughout the productive area. A few wells may be benefited but the water tends to move toward the areas of relatively low pressure and especially toward wells that are being operated with insufficient back pressure. Consequently unless the entire productive area is actually repressured the water that is forced away from some wells will probably damage others.

### Air-Gas Lift

Beneficial results in controlling water by back pressure in air-gas lift operations have been reported from several fields. In this connection E. O. Bennett[4] is quoted as follows:

"One of the best examples I can cite regarding the use of gas pressure as a water control is in the Panhandle Field

[1]Methods for Increasing the Recovery From Oil Sands, United States Bureau of Mines Bulletin 148.

*Personal communication.
[2]Personal communication.
[3]"Effect of Repressuring Producing Sands During the Flush Stage of Production." Petroleum Development and Technology in 1927. American Institute of Mining and Metallurgical Engineers.

[4]Personal communication.

in Texas. In this particular field we had many wells that had gone almost entirely to water, due to the extreme rate of pressure dissipation in the entire territory and due to the fact that the entire field was underlain with water.

"After the gas pressure was dissipated the water was caused to bridge up in a flat cone and when the cone cut across the well bore, our wells went to water very rapidly, often increasing from 10 per cent to 90 per cent within 30 days time. We had the thought that proper pressure control applied by means of gas lift would hold down the water cone and permit lateral drainage of oil to the well. (I had quite a discussion of this subject in the 1926 volume of A.I.M.E. Petroleum Technology, to which you are referred.)

"Consequently we built a 1,200-horsepower compressor station capable of compressing gas up to 500 pounds pressure and started to operate wells on the gas lift under high back pressure. We found as we had anticipated that we were able to cut back the percentage of water and take increasing amounts of oil. In several cases we cut water back from 95 per cent down to approximately 25 per cent and increased production from 300 to 400 bbls. up to 2,200 bbls. per day. Some of these wells were so critical that 5 pounds reduction in pressure would permit the water rate to double and cut the oil rate correspondingly.

The following notes upon water control by back pressuring with the gas lift are quoted after Bennett and Sclater[3]:

"In some locations oil-bearing strata

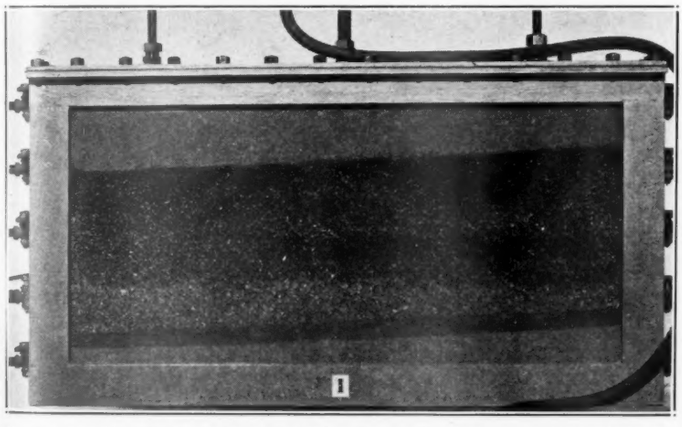


*Figure 6-A. Photograph of a Bureau of Mines experiment showing the retention of oil in a water flooded sand.*

are immediately above and in direct contact with water-bearing formations. This is particularly true in the Panhandle area where the top of the water-bearing stratum exists at approximately sea-level elevations. Above the oil formation in this region there exists a gas-bearing stratum. This upper gas formation, while separated by as much as 200 feet from the oil, is open to the oil formation in spots.

"Where wells have been producing by swabbing heavily or by flowing through a 6⅝-inch oil string with extremely large gas factors, the pressure in the upper gas region adjacent to the wells has been dissipated and the water surface has risen under hydrosatic pressure due to the decreased gas pressure above.

"The extreme reduction of this pressure has caused the water to cone up at the well and eventually break through the oil strata, trapping off the oil and causing the well to produce water. If swabbing is continued under these conditions, or the natural flow allowed to take place, the well will continue to produce nothing but water. This will occur also if a well on the gas lift is improperly handled.

"Conditions such as just described can best be remedied by use of the gas lift under back pressure. In most cases where proper installation is made the resistance to flow furnished sufficient pressure on the sand without the necessity of surface control. The best arrangement for flowing a well producing water is to pump the gas down between the casing and tubing and produce the oil through the tubing. The tubing may be raised off bottom to a point where the fluid head between its lowest extremity and the water surface, plus the additional head required to flow the oil through the tubing, will exert sufficient pressure on the sand to prevent the water from coming up through the oil. If the tubing is maintained too close to the water level, it will tend to make the well produce water to the exclusion of oil. Where a proper pressure is maintained to keep the water level down, the entrance of oil to the well will take place over the top of the water surface by lateral travel instead of cross-bed travel and the water will be held in check. When water breaks through and wets an oil-producing sand it excludes the oil by virtue of its greater surface tension. Water also migrates through a sand with less resistance on account of its greater fluidity.

"In some wells a control of pressure is extremely critical. A few pounds increase or decrease on the sand will materially change the oil and water ratio where wells are producing some water. In one particular instance, a well in the Panhandle district was producing 680 bbls. of oil and 66 per cent water by swabbing. This well was fitted with 4½-inch tubing to within 400 feet of the bottom. Gas was introduced between the casing and tubing and the fluid flowed through the tubing. This well has since been producing 1,700 bbls. of oil per day on the gas lift and the water percentage was reduced to 25 per cent where it has remained constant. The pressure required to flow the well is approximately 160 pounds. The estimated weight of the fluid column between the bottom of the tubing and the top of the water-saturated formation is 150 pounds. Under this condition the total pressure on the water front is 310 pounds, which is sufficient to prevent it from coning up through the oil-bearing formation. Lowering the tubing increases the resistance to flow on account of the greater distance the fluid must travel. This, however, decreases the hydrostatic head between the bottom of the tubing and the surface of the formation in the well at a greater rate than the pressure required for flowing increases. This causes the pressure on the sand to become less and the bottom water to cone up, wherever it is present.

"Another method of holding back pressure on the sand when using the gas lift is by restricting the flow from the well by the use of a valve or flow "bean." Adjustable flow "beans" have been found most desirable for this purpose as they are readily changed. Where it is desired or necessary to impose back pressure on the producing formation, the

[3]Some new Aspects of the Gas Lift, by E. O. Bennett and K. C. Sclater. Petroleum Development and Technology in 1926. American Institute of Mining and Metallurgical Engineers.


WICKWIRE SPENCER STEEL CO.

*For Strength and Uniformity Use*

*Most certainly on the hardest jobs*

WICKWIRE SPENCER STEEL COMPANY
41 East 42nd St., New York City

Wickwire Spencer Sales Corp.
1304 The Philtower, Tulsa, Okla.

Murray Tool and Supply Co.
Tulsa, Okla.

Acme Tool Co.
Breckenridge, Tex.

T. T. Word Supply Co.
Houston, Texas

A. F. Keck & Co.
Butler, Pa.

WICKWIRE SPENCER STEEL CO.

WICKWIRE SPENCER
UNIFORM WIRE ROPE

# Nor-Bro Turnbuckles are made *Especially for the Oil Industry,* Priced Correctly *and* Shipped *from 3 Strategic distributing points*

If the turnbuckles you buy are for oil-industry use, then here is a service tailored to your requirements. The design of NOR-BRO Turnbuckles is by men who are living their lives in the shadow of *oil-industry* derricks. Metallurgical specifications are by an engineer whose vocation is the study of metals under *oil-industry* conditions. Manufacture is by machinery designed particularly for the production of *oil-industry* turnbuckles.

Shipment is made from Robinson, Ill., Owensboro, Ky., or Fort Worth, Texas. *Prices are attractive.* To get in touch with Norris Brothers, Inc., at any one of the above-mentioned points is such an easy way to complete turnbuckle satisfaction!

**NORRIS BROTHERS**
**Turnbuckles** Designed Especially for the Oil Industry


method of raising the tubing is more economical and should be used, especially where the fluid will rise naturally to a point high enough to effect the desired pressure on the sand and still maintain production. By using this method the working pressure of the extraneous gas is less than that required by well-head control and the compression costs are materially reduced.

"The left section of Figure 1 shows the relative positions of oil and water as they exist in the producing formation before a well is produced excessively. The middle section shows the effects of hard swabbing or flowing off bottom with the gas lift. The dissipation of fluid and gas adjacent to the well creates a low-pressure region permitting the water to cone up. When the upward traveling water cone cuts across the bottom of the well some water will be produced. As the water cone travels upward more and more water will be produced and the oil formation will become filled with water cutting off the lateral travel of more oil. When the water cone crosses the oil-drainage cone inside the well bore, the well will produce nothing but water.

"The right section of Figure 1 shows the effect of applying back pressure by any suitable means. The pressure exerted at the bottom is sufficient to force the water down and hold it back. It, however, is not sufficient to prevent the oil from traveling into the well. Where the formation is tight at the bottom of the well and water is present, the water will enter from the sides. This method of controlling water has been found very successful in the Panhandle Field, where many of the wells produce water. Several wells on the gas lift under back-pressure control are producing pipe line oil, whereas all the surrounding wells in the same formation producing by swabbing and pumping are making water in quantities ranging from 1 to 95 per cent.

"No wells should be produced at a rate that requires a back-pressure low enough to permit water encroachment where it is known that a smaller flow under a higher back pressure will produce pipe line oil. A well flowing at a lower rate and free from water will in most cases produce more oil ultimately than one producing at a greater rate which makes water. In addition to the recovery of a greater volume of oil, an additional saving will be made in treating of the oil to separate the water.

"When the natural pressure in the formation declines the flow line is lowered to maintain the proper hydrostatic balance on the water as described. A careful study of pressures is made at all times by the use of recording pressure gauges which supply the necessary information for determining the proper positions of the flow line."

The value of these notes is fully recognized but the writer of this article is led to believe, from his experiments upon water coning, that Bennett's and Sclater's conception of water coning as illustrated in Figure 1 is subject to modification in accordance with the article upon water control in The Oil and Gas Journal of September 20, 1928.

Bennett and Sclater are quoted further from the same paper as follows:

"Figure 2 shows a curve representing a group of 53 wells in the Panhandle Field which were completed at approximately the same time. The ordinates of the curves represent peak production. The abscissae represent days after the peak production was reached. The wells followed a typical decline curve for lime formation production for 50 days as shown by the curve from A to B. The sudden drop in the curve from B to C is caused by water encroachment in the field due to depleted gas pressure in the formation. At C a few wells were put on the gas lift with the result that the rate of decline was lessened and the curve went from C to D instead of from C to H as it would have done under natural conditions. When the point D was reached, a sudden drop in production occurred due to one large well, not on the gas lift, going to water. This very rapid decline continued for two days to the point E, when equipment for putting this well on the gas lift was installed. The gas-lift method brought the well back to life as a good and consistent producer, as shown by the rising production from the section of curve between E and J.

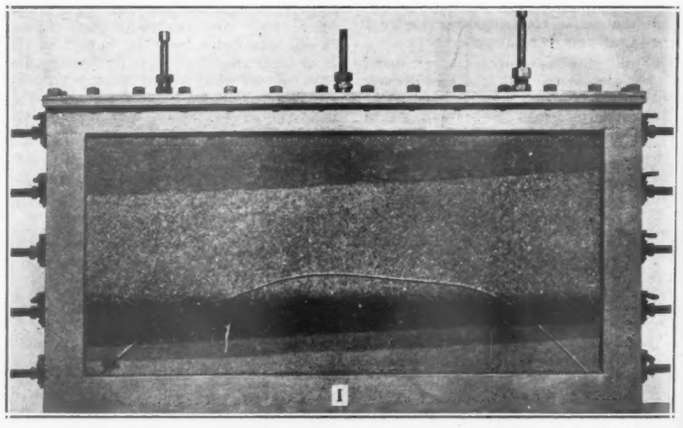


*Figure 6-B. Photograph of the same Bureau of Mines experiment (Figure 6-A) showing how completely the oil migrated downward and reaccumulated at the bottom of the tank when the water escaped through an accidental crack in the plate glass front.*

"At J a large plant was put in operation and several more wells were produced by the gas-lift method, raising the production to the value shown by the point F. Since reaching the point F the production of this entire curve of wells has been maintained without any decline, as shown by the present time is about where it would have been if the original normal decline had occurred without water encroachment. This curve is shown by the extension of AB to K. If the second group of wells had not been put on the gas lift at the time the well at D went to water, the production would have declined rapidly from E to H, or lower. The very marked increase in production was accomplished by putting 10 wells on the gas lift.

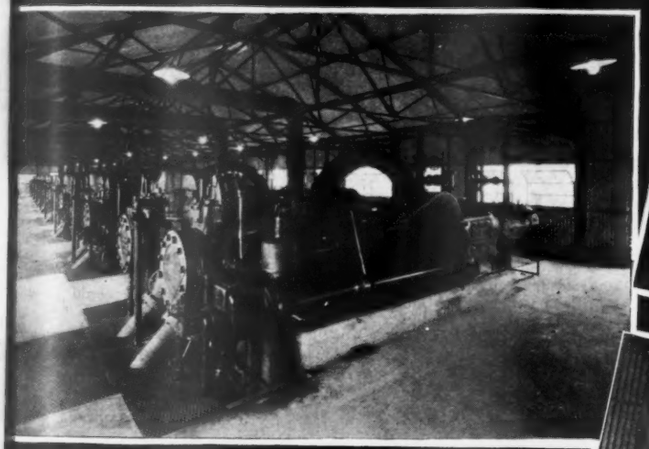
"A careful study and analysis of the curves of Figure 2 shows the possibilty of using the gas lift as a very satisfactory means of prolonging the productive period where it would otherwise be shortened by the encroachment of bottom water."

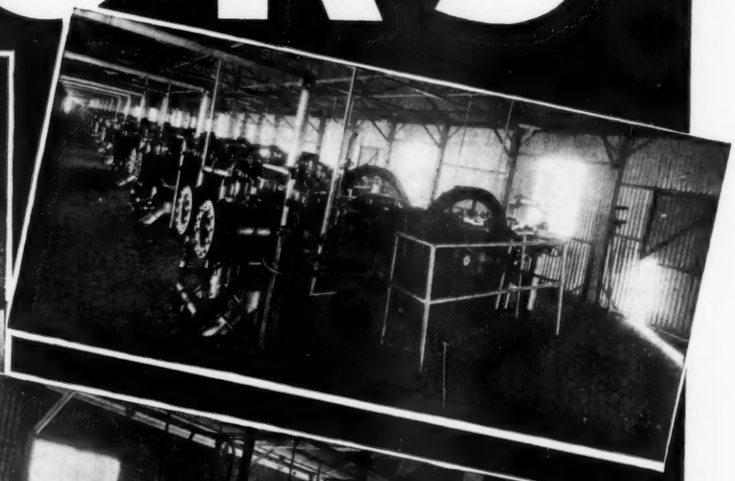
In another paper upon the gas-lift method of production, Bennett[6] describes the control of water coning as follows:

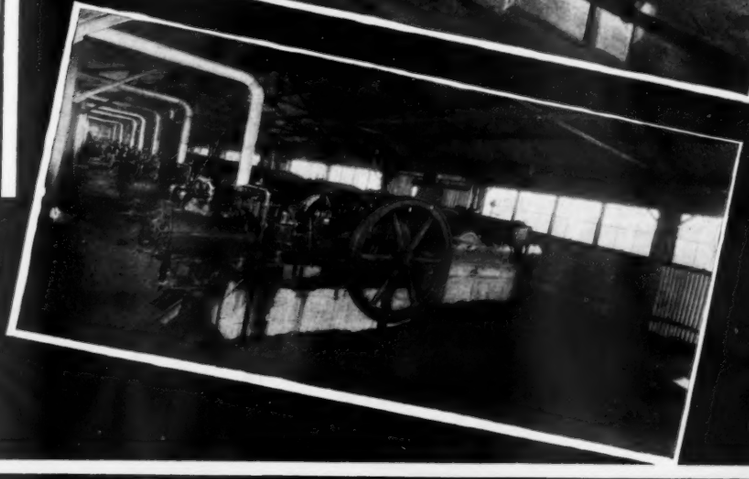
"The gas lift can be very effectively used to increase the ultimate production of a field in which bottom-water encroachment is encountered. Pressure and flow conditions may be regulated so that back pressures on the formation sufficient to hold down bottom water coning

[6]Bennett, E. O. Effect of the Gas Lift on the Gas Factor and on Ultimate Production. Petroleum Development and Technology in 1927, American Institute of Mining and Metallurgical Engineers, New York City.

# RIOR
# ESSORS





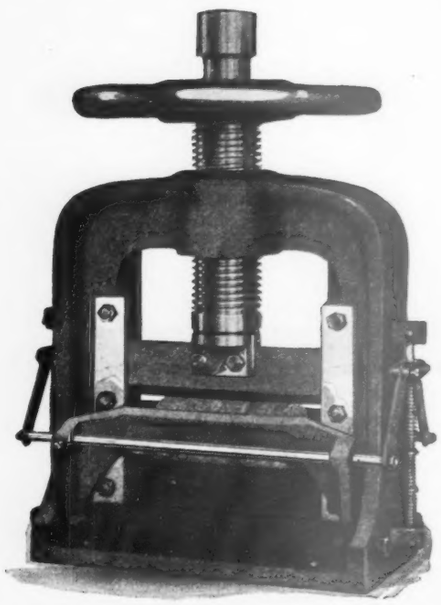


**O H.P.**

***LATIONS***

**SUPPLY**

**IIES**



## Split Your Diamond Drill Cores

A diamond drill core costs money. It is worth it, because drill cores preserve fossil evidence and show changes in stratification, color, texture, saturation and porosity of oil sands—information of great value in your structure tests.

Perhaps there are occasions when you would like to have duplicate or even triplicate core samples, so that a complete core record of specific drilling can be kept in more than one place. It is perfectly easy to secure duplicate core records through the use of a Longyear core splitter, as many operators have found.

Should occasion arise for chemical analysis, one-half of the core lengthwise may be used for a laboratory sample, leaving the other half intact as a permanent core record.

The Longyear core splitter is a product of our own design to halve or quarter rock cores longitudinally. The core is clamped in a horizontal position on the lower plate and the upper plate is lowered by means of a hand wheel attached to the threaded spindle until in firm contact with the core. A quick, sharp blow of the hammer on the shaft head splits the core. The splitter handles the core rapidly and is built to stand punishment.

The core splitter is made in three sizes, for cores 15/16 to 2 inches, from 1⅜ to 3½ inches, and from 4 to 6 inches, the latter being operated by hydraulic pressure.

We are glad to answer all inquiries regarding this equipment. Write for our new bulletin No. 30 concerning these Longyear core splitters.

**E. J. Longyear Company**
**Minneapolis, Minnesota, U.S.A.**

can be maintained allowing lateral drainage of oil above the water plane. This method of operation has been in successful use for the past year in the Panhandle. A well in this district, which made 100 per cent water in December, 1926, has averaged 590 bbls. of oil per day since that time. The gas lift has also made economical recovery from wells producing as much as 90 per cent water. Some wells in this class produce as much as 2,500 bbls. of fluid with but 250 bbls. of oil. A pump cannot be made to handle this volume of fluid. However, large-capacity pumps set in the casing by slips and packers and operated without tubing are being used for pumping large quantities very successfully."

In a paper entitled "Pressure Control of Oil Wells," by E. H. Griswold and W. J. Wilkins, presented before the Mid-Continent section of the American Institute of Mining and Metallurgical Engineers at Tulsa on September 28, 1928, much valuable information was given upon water control in the gas-lift operations of the Marland Oil Co., a part of which is quoted as follows:

"In the majority of flowing wells, approach of edgewater is indicated by a sharp rise in flow temperature and a tendency for the natural gas factor to decrease spontaneously. Allowances must be made in the interpretation of flowing temperatures for changes in temperature of input gas on gas-lift wells. Changes in back pressure also change temperature readings due to gas expansion, and must be discounted.

In cases where temperature or gas factors indicated the approach of water, the highest back pressures, permissible with low gas factors, have been held with ostensibly excellent results, as these wells did not go to water as fast as similar but uncontrolled wells. Results of this kind cannot be conclusive as there is no suitable basis for absolute comparison, but they are at least strongly indicative.

After wells start producing some water, the water-oil ratio often may be varied appreciably by pressure control. In one case a well which was swabbing 50 bbls. of water with 600 bbls. of oil was placed on the gas lift and the water entirely eliminated for 23 days, even though the oil production was increased to 700 bbls. per day. In many cases the water-oil ratio has been decreased materially and held down through control of bottom hole pressures by changing submergence or outlet pressures.

### Dewatering

In some localities it has been profitable to produce as much water as possible instead of trying to hold it back from the wells. The purpose is to bring in more oil and produce it along with the water being pumped, to lower the water level in the productive formations and to prevent or retard the encroachment of water. High gravity oils of low viscosity are most readily flushed into the wells by the water whereas with heavy oils of high viscosity the effect of producing large quantities of water is often ruinous as explained in the preceding articles upon water control.

It has been claimed that the effect of successful dewatering operations is to sometimes cause the oil-water contact to slope toward those parts of the sand where the water is being removed, and also that the oil tends to move down such inclined oil-water contacts toward the water wells. This is illustrated by Figures 3 and 4 which are based upon the results of laboratory experiments performed by the writer for the United States Bureau of Mines. Oils of low viscosity were used in sands of uniform texture.

The experiments also indicate that lowering the water level in a water flooded sand of open texture causes a downward reaccumulation of oil immediately above and resting upon the lowering water. In other words the oil that was entrapped by the water, drains downward with the receding water and reaccumulates immediately on top of the water that remains. A large part of this reaccumulated oil could be recovered through experimental wells especially if the dewatering were accompanied by repressuring. The subject is worthy of further investigation with a view toward the recovery of high gravity oil from many drowned out areas.

To properly interpret the results of such experiments the effects of irregular texture and bedding of the sands must be considered. Silicious breaks and shale partings may divide a sand into different layers so that the rearrangements of the fluids shown in Figures 3 and 4 must occur independently in each layer or "pay" according to the conditions in that layer. It is impossible to predict with certainty what these rearrangements will be like in a sand that is much broken with shale breaks, as for example in the Bartlesville sand of Oklahoma, but it is certain that sands of open texture that are relatively free from shale breaks are the best for dewatering operations. Here again, core studies of the sands should serve as a preliminary guide as to the best sands in which to undertake such oil recovery operations.

Whether or not enough water can be produced from an oil-bearing formation to benefit the oil production depends largely upon local conditions. In some fields, any effort toward lowering the water level by pumping is regarded about in the same light as trying to lower the level of the ocean. The operators speak of having an ocean of salt water to deal with. It is customary, however, in many fields to pump the water off with the oil, and in some it is possible to lower the water level by pumping. Dewatering operations have been successfully conducted in the Ohio, Pennsylvania and Indiana Fields, where wells have been put to pumping nothing but water for months, or even for years, to accomplish the desired result. Outstanding examples of this are the old Glade Run and Petroleum Center Pools in Pennsylvania and the Trenton lime production in Hancock and Wood Counties, Ohio, near Findlay. The Petroleum Center Pool was dewatered after it had stood flooded for many years following the earliest operations in Pennsylvania. In all of these localities water was pumped for over a year before the desired oil production could be obtained.

Throughout many of the old Appalachian pools it is customary to pump water with a small proportion of oil continuously day and night. Oils of low viscosity are readily flushed through the sand by the water so that although the supply of water appears to be inexhaustible, the more water that is produced the more oil is also produced. This also holds true in some of the Mid-Continent pools.

One reason for these benefits from pumping water is the so called induced migration and segregation of oil which increases the production of favorably situated wells. This induced migration of oil to favorably situated wells and the enrichment of certain parts of the oil sands incident to the pumping of large volumes of water was described over 10 years ago in United States Geological Survey Bulletin 693, in which numerous examples in the Appalachian fields were cited. Similar conditions were described by Paul Torey in a paper entitled "Some Factors Influencing Production of Oil by Flooding in the Bradford and Allegany Fields" which was published by the American Institute of Mining and Metallurgical Engineers in December, 1927, as Technical Publication No. 39, Class G, Oil and Gas No. 6. Such relationships apply only to light oils of low viscosity in sands of open texture.

Many of the efforts toward dewatering sands in the Mid-Continent fields have failed because of inability to pump off the water fast enough. In the Wilcox sand of the Tonkawa Field, edgewater under high pressure has encroached far up the structure. The depths of the wells average around 4,000 feet and in some of them the water will rise 2,000 feet, indicating a water pressure of over 800 pounds. Efforts to control this water by pumping, swabbing, air lift and repressuring have all failed. Producing water at the rate of 1,500 bbls. per day per well on air lift apparently made no impression

# Which Motor?

**Fynn-Weichsel for power-factor correction and constant speed; slip-ring for adjustable speed; squirrel-cage for simplicity; air jacket for dust, dirt and fumes; brush-lifting repulsion induction for quiet single-phase operation . . . Wagner manufactures every commercial type.**

**Wagner makes every commercial type of alternating current motor and can recommend without prejudice.**

*Literature on Request*

**WAGNER ELECTRIC CORPORATION**
**6400 Plymouth Avenue, St. Louis, U. S. A.**
*Wagner Sales Offices & Service Stations in 25 Principal Cities*

***Products:*** **FANS . . . . . Desk, Wall and Ceiling**
**TRANSFORMERS . . . Power, Distribution and Instrument**
**MOTORS . . . Single-phase, Polyphase and Direct Current**

**Wagner . . . quality**

61-7631-5

**for**

**Cracking Units Refineries**
**Gas Engines Compressors**
**Pumps Vapor Lines**
**Crane Flanges, etc.**

**COPPER ALUMINUM**
**ARMCO MONEL**

**McCord Radiator & Mfg. Co.**
**DETROIT**

except to bring in more water. It was found, however, that the production of oil increased slightly as more water was produced.

Efforts toward water control in the El Dorado and Augusta Fields of Kansas by pumping off vast quantities of salt water were tried and abandoned many years ago in favor of corrective work with cement. It was found that pumping vast quantities of water with long-stroke 3-inch pumps only brought more water in. In these fields, as in many others, it was like pumping from the ocean.

In the shallow sands of the Tonkawa Field and in such fields as Garber and Braman, Oklahoma, and Oxford, Kansas, it is possible to pump the water off with the oil. Under these conditions the encroachment of edgewater is often arrested by the continued pumping off of the water. There are many old pumping fields where the edgewater level has not changed in years.

It is not uncommon to find serious water encroachment occurring in the heart of a large producing field that is otherwise unaffected by water. Reference is sometimes made to this sort of thing as an accidental water drive and there are numerous examples of it in such fields as Cushing and Burbank. The trouble can usually be traced to offending wells that are admitting either top or bottom water into the producing formation. Leaking or improperly set casing is a common cause for the admission of top water. A more serious cause for this sort of water trouble is the improper plugging and abandonment of wells. Some of the operators in the Burbank Field are obliged to pump 100 per cent water continuously from a number of wells in order to protect their properties against top water entering the oil sand through improperly plugged and abandoned wells which can never be repaired. By pumping water continuously it is often possible to retard or even stop further encroachment by water entering a sand through an offending well but such operations are exceedingly costly.

The lowering of the water level in oil sands by dewatering operations is an economic as well as an engineering problem. The cost of dewatering, the increase in oil production that can be obtained, the time required to recover the oil and many other economic factors enter into the problem. One of the most serious obstacles in the way of dewatering operations is the surface disposal of the salt water in any large-scale dewatering operation. This problem is already being studied by the engineers of the United States Bureau of Mines. It will eventually be solved.

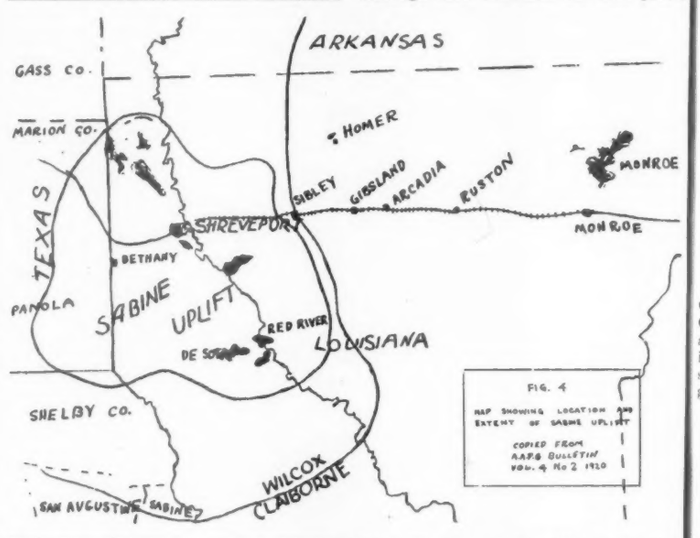
If the water level in a number of test wells can be appreciably lowered by pumping, it may be inferred that dewatering has a reasonable chance for success if it is not too costly. Already one of the large oil producing companies has developed an electrically driven rotary oil well pump capable of lifting several thousand barrels of oil or water per day. Plans are being made to use this equipment of dewatering operations. The time will some day come when the price of oil will warrant extensive dewatering operations. If the limited capacities of oil-well pumps prove insufficient, it is safe to predict that shafts will be sunk and mine pumps installed to lift millions of gallons of water per day. Much of the oil left in these water-flooded sands will eventually be recovered through dewatering operations.

## MAGNETOMETER SURVEY OF STATE OF LOUISIANA

(Continued from Page 85)

rapidly developed and attained maximum production in 1914. Oil was found in Red River Parish in 1914, and the famous Gusher Bend in the Red River was exploited in 1915. . . . The first production of petroleum off the uplift was north of Monroe in Morehouse and Ouachita Parishes, where gas was discovered in 1917."

". . . Many anticlines and domes on the top and sides of the uplift are dry, although their existence has been proved by drilling. . . . In spite of the presence of these barren structures the areas most promising for future production in North Louisiana are on the sides of the uplift."




Magnetometer results in the region of the Sabine uplift:

Plate 2 shows that in the northwestern corner of the State there is a prominent magnetic high centered roughly around the city of Shreveport. Comparing this particular area of Plate 2 with the sketch of the Sabine uplift, Figure 4 brings out the remarkable resemblance.

Profile 1 also shows the general magnetic high condition as the uplift is passed over, Benton being higher magnetically than Jefferson on the west and Homer on the east.

Profile 2 shows that Shreveport is also higher than Marshall on the west and Minden on the east.

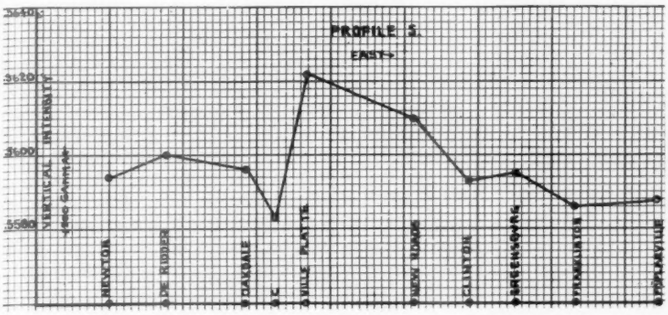
Profile 3 shows that at Mansfield the uplift still manifests itself by the slightly higher intensity.

Profile 7 shows the magnetic relief as the uplift is crossed from a south to north direction.

As is pointed out in Mr. Powers' paper the sketch, Figure 4, gives the general outline of the Sabine uplift, and although the detailed structure is quite complicated, the general picture is that of a large plateau. The reader's attention is also called to the fact that Plate 2 shows only the general magnetic picture and that if a detailed magnetic sur-

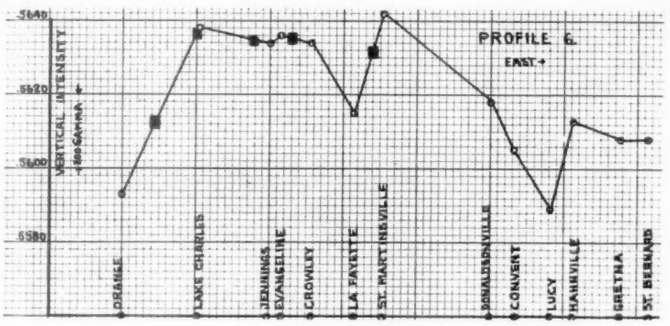
vey were made of this same region it would probably also show many local highs and lows.

Just south of this general uplift the magnetometer shows another large flat high area centered about the town of

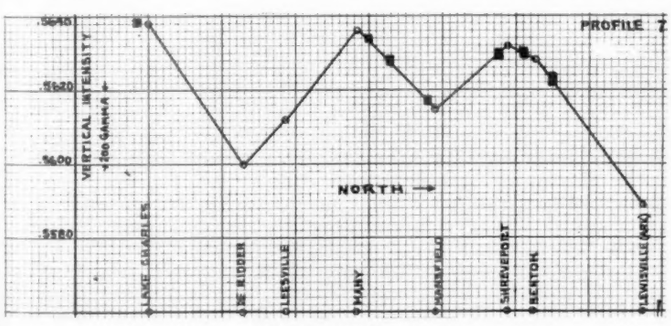



Many. Unfortunately, no geological information is at hand for purposes of comparison. Magnetically it is very similar to the region of the Sabine uplift.

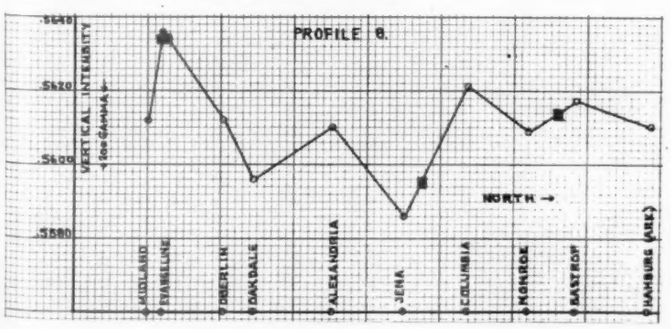
In southern Louisiana the magnetometer shows that the region from Lake




Charles through Jennings, Evangeline, Crowley, St. Martinsville is apparently a magnetic ridge. The reader's attention is called to the fact that several of the salt dome oil fields are lined up on this general magnetic ridge.




Although no definite statement as to the cause of this can be made, it is nevertheless significant. It might be that the magnetometer is tracing the extent




of the iron pyrites which seem to be found in the subsurface of this general area.

### Conclusions

Ordinarily, when geophysical methods are mentioned in connection with work in Louisiana, the exploration for salt domes comes to mind. The object of this paper was to point out the value of magnetometer surveys in the northern part of the State where the seismic and geophone methods are not so well adapted.

It has been shown by means of the profiles that in a majority of instances the known oil-bearing areas are associated with unusual magnetic disturbances and out of the 26 areas examined 19 occurred in conjunction with magnetic highs. This in itself should, of course, give added importance to the other high magnetic areas, where as yet no oil fields have been found.

The very favorable results of the magnetometer obtained in tracing the outline of the Sabine uplift should also give added weight to the value of the magnetometer for exploratory detailed work in this area.

In conclusion, the reader's attention is again called to the general magnetic high areas in northern Louisiana, where a detailed survey should prove of economic value.

# "TOLEDOS" DO THE JOB QUICKLY

An 8 inch bend to be cut and threaded. The operator, to do the job most efficiently, uses the "TOLEDO" No. 9 work bench and chain vise, capacity 2 inch to 14 inch pipe, to hold the bend. A "TOLEDO" No. 80 automatic pipe cutter, capacity 4½ inch to 8 inch, cuts the pipe off in 50 seconds, and leaves a straight, square-end cut without burr. A "TOLEDO" No. 3 threading device, capacity 4½ inch to 8 inch, is easily and quickly put on the pipe, and a smooth, perfectly tapered, standard thread cut in 2½ minutes. The new "TOLEDO" Super-Power Drive operates the tools, the most rapid and efficient means for cutting and threading large pipe.

You will find that "TOLEDOS," as a part of your equipment, will soon pay for themselves by the time and labor they will save. We will be glad to show you how "TOLEDOS" will help solve your piping jobs.

"TOLEDO" No. 3 threads 4½" to 8" pipe quickly and in any position.

"TOLEDO" No. 80 cuts off 4½" to 8" pipe, leaving a perfect squared end.

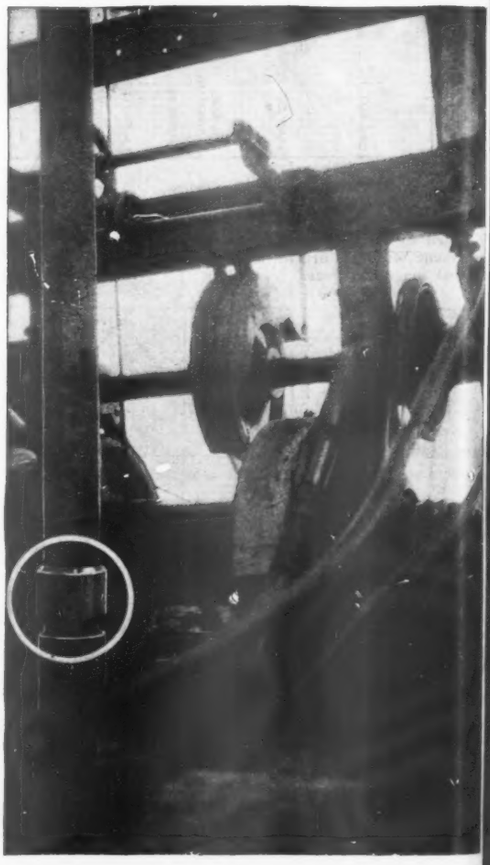
**THE TOLEDO PIPE THREADING MACHINE CO. TOLEDO, OHIO**

**New York Office 72 Lafayette St.**

"TOLEDO"

NO FINER PIPE TOOLS ARE MADE THAN GENUINE "TOLEDOS"

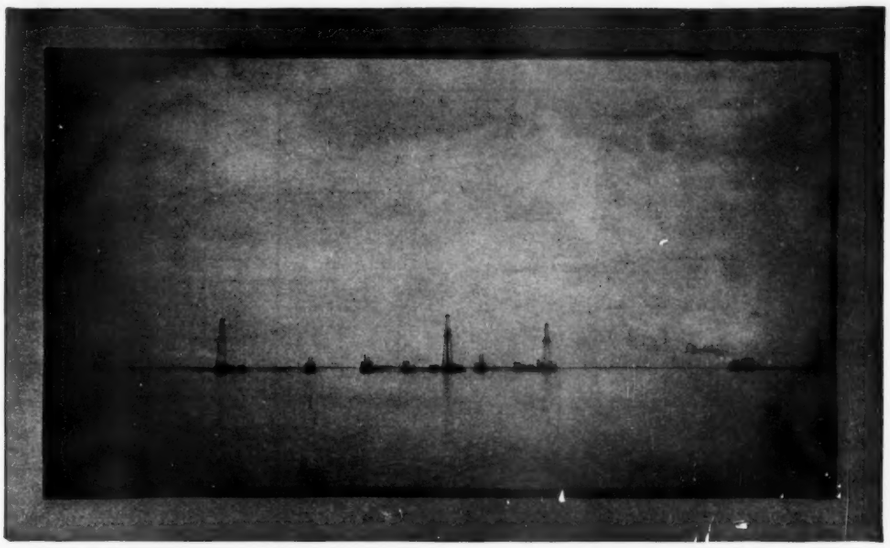
# In Goose Creek an



15,000 feet of hole with one string of pipe equipped with Bettis Protectors is one of the records made in the Goose Creek, Texas, field. This was the first string of Bettis Protectors installed about one year ago and the rubbers are just beginning to wear out. During this long service there has never been a single replacement of a collar or a tool joint. The boys at Goose Creek know their rubbers.

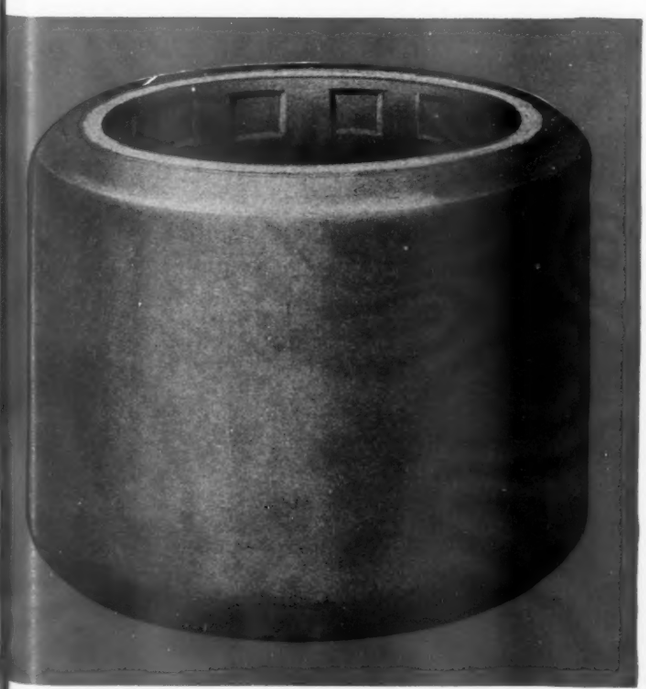
# Bettis Protectors

***The genuine anti-friction Rubbers for Drill Pipe***



# and Maracaibo

"Best bet yet!"



4610 Bettis Protectors are in service in the Maracaibo field alone. Of the total orders received to date from Venezuela 55% were repeat orders. Now practically every rotary field in the World is using Bettis Protectors. In some fields from 95 to 100% of the wells have them. At Kettleman Hills, Ventura and Santa Fe Springs in California, considered by many drillers to be the World's toughest fields, Bettis Protectors are in almost every well.

You'll cut your drilling costs to the "quick" with Bettis rubbers helping you. No seams, no hinges, no metal added to hole. Ask for Catalog.

*Hopkins Anti-Friction Tool Joints and Collars*

—now available with genuine Bettis Protectors.

These tool joints are made under licenses granted to leading tool manufacturers by us.

**Patterson-Ballagh Corporation**

Insurance Exchange Building

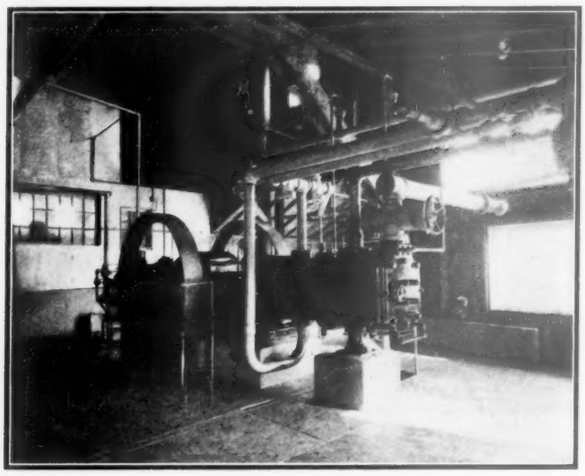
Los Angeles

*Mid-Continent Distributors:*
Bettis Sales Co., 616 Public National Bank Bldg., Houston

*New York Office:* 39 Cortlandt St.

*Carried in stock at* Los Angeles, Santa Fe Springs, Ventura, Bakersfield, Coalinga, Long Beach, Tulsa, Houston, Wink, Texas; New York City.

# The best evidence



# of BARCO Valve Superiority

EVERY valve used by one Pennsylvania company—in accumulator house, refinery, and in the field—is a Barco Lubricated Plug Valve. Sizes range from ½ in. to 6 in. and the service from a very hot gas line with 200 lbs. pressure to a line from field to compressor with 18 inches of vacuum.

Barco valves do not stick or leak, and eliminate frequent replacing of packing, renewing or regrinding of seats, and other maintenance. An occasional turn of the lubricating screw is all the maintenance needed for Barco valves. They work equally well on gas, oil, water and air lines.

Send for our latest bulletin on valves and flexible joints. Free, but valuable to oil and gas men.

**Barco Manufacturing Company**
**1801 Winnemac Avenue, Chicago, Illinois**

**Agents:**

**Vinson-Canter Co., Tulsa, Oklahoma**

**M. N. Dannenbaum Co., Houston, Texas**

BARCO
Valves and Joints

O&GJ 4-18-Gray


## WILDCAT OPERATIONS IN KANSAS

(Continued from Page 44)

**ELLIS COUNTY**

Jones Book's No. 1 Wagner, C SE SE Sec. 35-15-16w ..Drlg. 3,305 ft.
T. C. Johnson's No. 1 Robbins, SW NW Sec. 15-14-16w ..Drlg. 1,025 ft.
John Brown's No. 1 Gestner, SE cor. SW NE Sec. 13-13-18w .....Drlg. 1,350 ft.
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w .....Shut down 1,100 ft.
Finney & Weiner's No. 1 Freeman, SE cor. SW Sec. 24-15-20w .....Spudded and shut down.
Atlantic Oil Prod. Co.-D. B. Mason's No. 1 Gorham estate, C SE SE Sec. 35-15-16w .....Shut down 3,175 ft.
Phillips Pet. Co.'s No. 1 Johnson, SW cor. NE Sec. 9-13-19w .....Drlg. 2,610 ft.
Phillips Pet. Co.'s No. 1 Dechant, NE SE Sec. 12-13-16w..Drlg. 1,720 ft.
Phillips Pet. Co.'s No. 1 Schneider, NW cor. Sec. 20-12-17w .....Drlg. 3,132 ft.
Burger et al's No. 1 Hadley, SW cor. SW NW Sec. 20-11-17w .....Spudding, shut down.
Caracas Group No. 1 Company's No. 1 Gestner, SE cor. SW NE Sec. 13-13-18w .....Shut down 1,750 ft.

**EDWARDS COUNTY**

Amerada & Wilcox's No. 1 Teansil, C NW NW Sec. 32-25-19w .....Drlg. 4,855 ft.
British American Oil Co.'s No. 1 McCarty, NE cor. NW Sec. 31-25-17w .....Shut down 3,810 ft.

**GEARY COUNTY**

Wright et al's No. 1 Younker, NW cor. NE Sec. 17-11-5..Shut down 1,200 ft.

**GRAHAM COUNTY**

Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w .....Shut down 2,450 ft.

**GREENOOD COUNTY**

P. H. Ballieu's No. 1 Bright, NE cor. SW Sec. 22-27-12e..Shut down 1,210 ft.

**HARPER COUNTY**

Amerada Pet. Corp.'s No. 1 Mendiville, C E SE Sec. 24-34-6w .....Drlg. 4,650 ft.; old total depth 5,360 ft., was plugged back.
Independent & Reserve Oil Co.'s No. 1 Moulds, C NE Sec. 7-24-1w .....Rig on ground.

**HARVEY COUNTY**

Roth & Parrent's No. 1 Brombrowsky, NW cor. Sec. 26-22-1e .....Drlg. 700 ft.
R. F. Garland's No. 1 Cox, NE cor. NE Sec. 27-24-1w ....Drlg. 3,505 ft.
Empire G. & F. Co.'s No. 1 Tangeman, SW cor. NE NE Sec. 19-22-1e .....Drlg. 3,142 ft.
Mrs. Gay et al's No. 1 Grove, C NW NE NW Sec. 29-23-1w .....Shut down 2,100 ft.
Slick & Corinell's No. 1 Gatz, NW cor. SE Sec. 36-22-16..Spudding.
Hartman & Skaer's No. 1 Seaman, NW cor. NE SE Sec. 26-24-1e .....Drlg. 2,050 ft.
Helmerich & Payne's No. 1 Lindamond, C SW NE SW Sec. 2-22-1e .....Drlg. 2,990 ft.
Fisher & Louch et al's No. 1 Reiger, NW cor. NE Sec. 17-23-2 .....Drlg. 2,980 ft.
Jolly & Ogg's No. 1 Randall, NE cor. NE Sec. 11-24-1w ..Drlg. 2,720 ft.
Patton et al's No. 1 Duning, SE cor. SW NE Sec. 26-24-1..Drlg. 1,250 ft.
Rosenthal et al's No. 1 Ingalls, C NW SW Sec. 24-23-3w..Drlg. 1,400 ft.
Jolly & Ogg's No. 1 Hupp, SE cor. NE Sec. 22-23-1w ....Drlg. 1,285 ft.

**JEFFERSON COUNTY**

Wichiet Oil Co.'s No. 1 Simpson, NW cor. SW SW Sec. 19-10-17 .....Rigged up and shut down.

**JACKSON COUNTY**

Garvin & Morton's No. 1 Lutes, SW cor. NW NW Sec. 27-7-15 .....Drlg. 2,230 ft.

**LANE COUNTY**

Blankenship Pet. Co.'s No. 1 Schaeffer, NE cor. NE Sec. 24-16-28w .....Spudded and shut down.

**MARSHALL COUNTY**

Irwin et al's No. 1 Cooper, NE NW Sec. 10-3-7e .....Drlg. 975 ft.
Empire O. & R. Co.'s No. 1 Scally, SW NE NE Sec. 28-19-2e .....Rig on ground.

**MARION COUNTY**

T. C. Johnson's No. 1 Doltweler, SW cor. NE Sec. 3-18-4e..Drlg. 600 ft.
Hartman & Skaer and White Eagle's No. 1 Kline, NE NW Sec. 28-18-3e .....Drlg. 2,200 ft.
Connell & Prairie's No. 1 Zvink, SE cor. SW Sec. 3-18-3e .....Drlg. 1,800 ft.
General Utilities Co.'s No. 1 Barkholder, Sec. 18-19-3e..Drlg. 1,075 ft.
General Utilities Co.'s No. 1 Propp, NE cor. SE SW Sec. 8-19-4e .....Rig.
Helmerich & Payne's No. 1 Rosen, NE cor. SE SW Sec. 25-21-2w .....Shut down 450 ft.
Derby & Shaw's No. 1 McNeill, C SW NW Sec. 15-19-4e..Drlg. 1,900 ft.
J. E. Hauna's No. 1 Pankratz, NE cor. NE SW Sec. 13-20-3 .....Rig.
A. E. Meyers' No. 1 Papp, SW cor. SW NE Sec. 10-18-2..Drlg. chat 2,590 2,635 ft.
Frank L. Moore's No. 1 Miller, NE cor. NE Sec. 26-19-1..Drlg. 520 ft.

**McPHERSON COUNTY**

Morrison & Shydell's No. 1 Shindberg, SE cor. NW Sec. 18-19-2w .....Spudding.
McPherson O. & G. Co.'s No. 1 Rasmusson, SW cor. Sec. 8-18-3w .....Spudding, shut down.
Ted Washabaugh's No. 1 Vosshell, NE cor. NE Sec. 9-21-2w .....Drlg. 2,840 ft.
McPherson Gas Co.'s No. 1 Reitz, NW cor. SE SW Sec. 1-20-2w .....Rig.
Lariaux et al's No. 1 Martinson, NE cor. Sec. 9-19-3w ..Rig.
Vickers Pet. Co.'s No. 1 Wedell, C SW Sec. 12-20-2w ....Rig.
Mid-Kansas Oil & Gas Co.'s No. 1 Yoder, C NW SW Sec. 8-20-4w .....Drlg. 3,630 ft.
J. H. Tatlock's No. 1 Hayer, C SW NE Sec. 32-20-1w ....Drlg. 550 ft.
Marland Prod. Co.'s No. 1 Wilkering, C SW SW Sec. 9-21-1w .....Underreaming 6-inch 3,010 ft.

**MORRIS COUNTY**

Hiatt et al's No. 1 Blythe, NW NE Sec. 35-15-5e .....Drlg. 1,240 ft.

**NESS COUNTY**

Barnsdall Oil Co.'s No. 1 Lauk, C SW Sec. 35-18-21w ..Underreaming casing 3,662 ft.

**OSBORNE COUNTY**

Empire O. & R. Co.'s No. 1 Crest, SE NE Sec. 30-9-14w .....Drlg. 2,320 ft.
Trees Oil Co.'s No. 1 Fayenter, NE cor. SE SE Sec. 22-8-16w .....Drlg. 300 ft.
S. D. Jarvis' No. 1 Jellison, SE cor. SE Sec. 13-10-15w ..Drlg. 2,636 ft.

**OTTAWA COUNTY**

Anderson et al's No. 1 Bank, NE cor. NW Sec. 28-10-2w ..Drlg. 3,275 ft.

**PAWNEE COUNTY**

F. C. Troupe's No. 1 Lovett, CEL NE NE Sec. 31-21-16w.Shut down 1,560 ft.

**PHILLIPS COUNTY**

Watsonia Oil Co.'s No. 1 Marklein, NE cor. SW Sec. 21-3-19w .....Fishing 3,895 ft.
British American Oil Co.'s No. 1 Weinman, C SW SW Sec. 34-2-19w .....Shut down 1,800 ft.

**PRATT COUNTY**

O'Haver & Jones' No. 1 Lunt, C SW NW Sec. 15-28-14w..Drlg. 265 ft.
Empire O. & R. Co.'s No. 1 Henderson, SW cor. Sec. 35-25-4w .....Rig on ground.

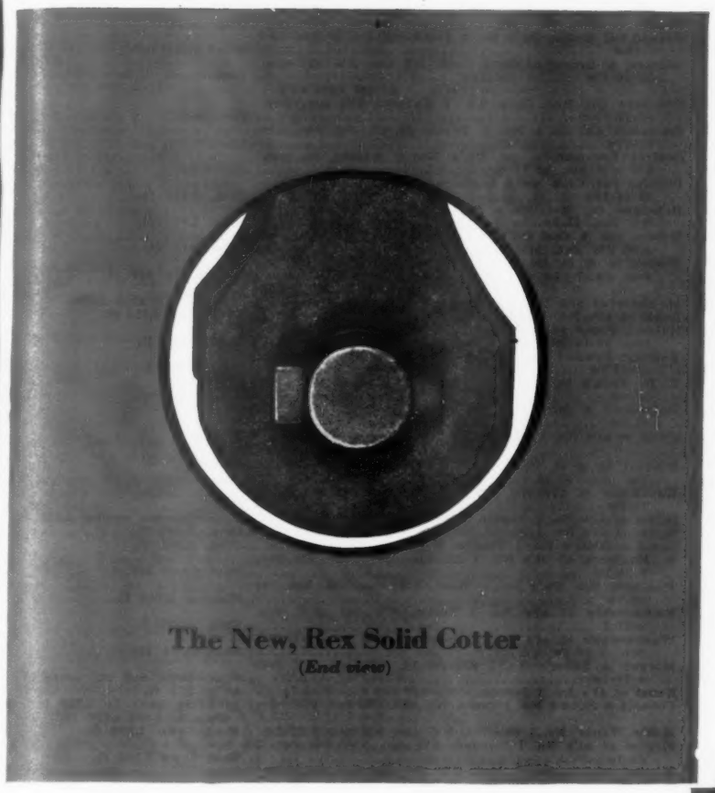
**RENO COUNTY**

Perry et al's No. 1 Oswald, NE cor. NE SE Sec. 30-22-5w .....Drlg. 1,840 ft.
Austin Drilling Co.'s No. 1 Strickley, SW cor. NW Sec. 17-25-5w .....Drlg. 880 ft.

**RICE COUNTY**

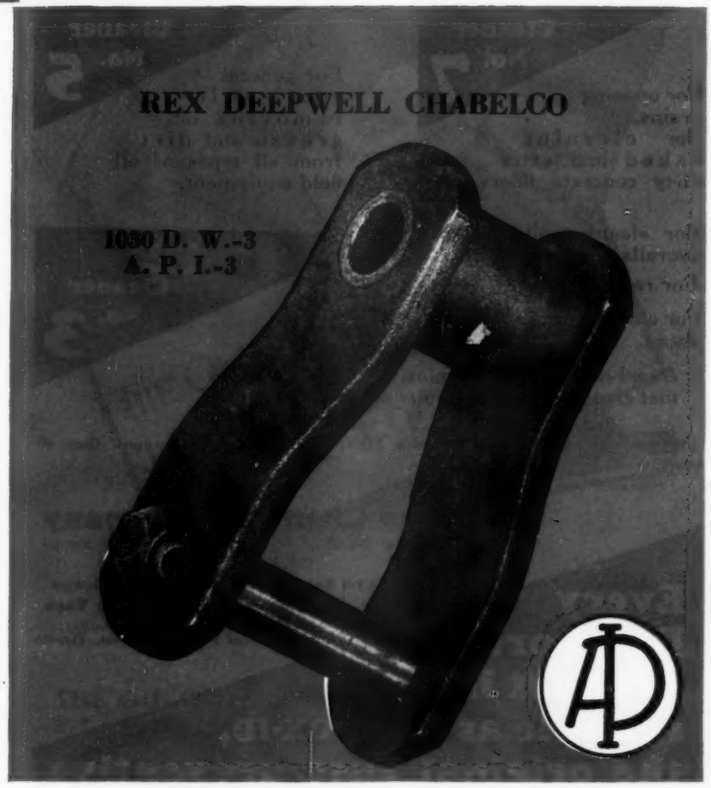
Allison & Fitzwilliams' No. 1 Poland, NE cor. SW NE Sec. 36-19-8w .....Cellar.
Higgins & Stembubble's No. 1 Shurr, NE cor. SW Sec. 21-20-10w .....Shut down 1,820 ft.

# FIT of REX CHABELCO • • •




## The New REX SOLID COTTER

***CANNOT ROCK—***
***CANNOT BREAK—***
***STAYS IN PLACE***




**The accurate force-fits between Ground, Seamless Bushings and Case-Hardened Pin; between Bushings and Seamless, Alloy Rollers—and the close tolerances in pitch between Sidebar working surfaces—all combine to give Strength, Hardness and Precision to the Unit Link that Stays a Unit.**

**Rex Deepwell Chabelco, 1030 D.W.3, A.P.I-3 and 1240 D.W.4, A.P.I-4, is now, more than ever, The Greatest Chain That Ever Hit The Oil Fields.**

**The new Rex Chabelco folder tells the story. Send for a copy today.**

**719 Park St., MILWAUKEE, WIS.**
**1414 Santa Fe Avenue, Los Angeles, Calif.**

# CHABELCO

**The Greatest Chain that Ever Hit The Oil Fields**

Dearborn
REG. U.S. PAT. OFFICE

Special 134

Cleans Up Scale

Deposits of lime scale in engine cooling jackets, in valves, meters, pipe lines, condensers and evaporators are cleaned up quickly with Dearborn Special 134. The application is simple: the treatment is mixed with water and circulated through the equipment for a short time. The scale drains out as sludge, leaving the equipment perfectly clean. *Any* lime scale can be removed, regardless of its thickness. Periodical treatment with Dearborn Special 134 insures maximum efficiency without much bother or loss of operating time. Try Dearborn Special 134 now, giving us gallonage capacity of equipment to be cleaned and approximate thickness of scale.

Cleaners

This company manufactures a line of exceptionally effective cleaners which have been in wide use for many years. Men who use them continue to do so year after year. Try Dearborn cleaners on our recommendation.

Dearborn Cleaner No. 7

For opening drains.
For cleaning caked and extra dirty concrete floors.

Dearborn Cleaner No. 5

For general service in removing oil, grease and dirt from all types of oil field equipment.

For cleaning oil and dirt from overalls and clothing.
For reclaiming rags.
For cleaning ordinarily dirty concrete floors.

Dearborn Cleaner No. 3

*Dearboline*, a non-explosive liquid cleaner that gives surprising results on metal surfaces.

The products of this company have been serving Industry for more than 40 years.

Dearborn Chemical Company
*"A House of Chemical Engineers" In Its Forty-first Year of Service to Industry*
310 South Michigan Ave., Chicago
299 Broadway, New York
*Canadian Offices and Factory:*
2454-2464 Dundas St., West, Toronto

Every Dearborn Product is as reliable as is NO-OX-ID, the original rust preventive

NO-OX-ID
IRON-RUST
TRADE MARK
The Original Rust Preventive

**RILEY COUNTY**

Derby & Shaw's No. 1 Lindstrom, NE cor. Sec. 32-7-5e..Rig.

**RUSSELL COUNTY**

Allison & Fitzwilliams' No. 1 Mohenny, NW SE Sec. 5-14-12w .....Rig.
Phillips Pet. Co.'s No. 1 Salback, SE NW Sec. 32-12-14w .....Rig on ground.
T. B. Slick's No. 1 Lellaus, SW cor. NE Sec. 36-15-13w..Spudding.

**ROOKS COUNTY**

Prairie O. & G. Co.'s No. 1 Ack, SE cor. Sec. 22-9-19w..Drlg. 2,625 ft.
Prairie Oil & Gas Co.'s No. 1 Sandberg, C SW Sec. 20-9-18w .....Drlg. 3,175 ft.
Burford & Brimm's No. 1 Toxa, NE cor. SW SE Sec. 22-18-17w .....Abandoned.

**RUSH COUNTY**

Danciger Oil Ref. Co.'s No. 1 Swindt, SW cor. Sec. 22-17-17w .....Spudding.
Barnsdall Oil Co.'s No. 1 Brock, C SE SE Sec. 21-17-17w .....Spudding.
Central Commercial Oil Co.'s No. 1 Brock, SE cor. SW SW Sec. 12-17-16w .....Spudding.
Phillips Pet. Co.'s No. 1 Legleiter, NE cor. NW SE Sec. 10-16-18w .....Drlg. 3,240 ft.
Danciger Oil Ref. Co.'s No. 1 Poland, NE cor. SW NE Sec. 17-19-17w .....Drlg. 1,600 ft.
Wilcox Oil & Gas Co.'s No. 1 Schwartzkopf, NE cor. NW SW Sec. 27-17-17w .....Drlg. 815 ft.
Wilcox O. & G. Co.'s No. 1 Woodward, NE cor. NE Sec. 35-27-17w .....Shut down 650 ft.

**SALINE COUNTY**

M. Estey et al's No. 1 Peterson, C NE Sec. 6-16-5w ....Spudded and shut down.
Boyle et al's No. 1 Miller, SW cor. SE Sec. 21-16-1w ....Shut down 2,615 ft.
Nathan Jones et al's No. 1 Robertson, NW cor. SW Sec. 27-14-2w .....Drlg. 3,517 ft.
Kenney Coastal Oil Co.'s No. 1 Beal, C NW Sec. 23-14-5w .....Drlg. 1,280 ft.
T. B. Slick's No. 1 Rosenhagen, SW SE NE Sec. 33-27-4w .....Drlg. 950 ft.
Hammond & Stout's No. 1 Roeder, SW NW Sec. 23-27-2w .....Rig.
Twist et al's No. 1 Armstrong, NE NW Sec. 28-26-1e ....Rig.

**SEDGWICK COUNTY**

Burnett O. & G. Co.'s No. 1 Davidson, NW cor. NW SW Sec. 27-26-1e .....Rig.
Bu-Vi-Bar et al's No. 1 Roberts, SE cor. SW Sec. 1-26-2w .....Rig.
Lewis et al's No. 1 Taylor, NW cor. NE Sec. 23-27-2 ....Underreaming casing 2,835 ft.
Kyser et al's No. 1 Stroot, SW cor. NW Sec. 8-26-2w ....Drlg. 3,483 ft.
Lario & Blair's No. 1 Tjaden, C NE SE Sec. 22-29-2w ..Drlg. 2,800 ft.
R. Magiason et al's No. 1 Buckles, NW cor. SE Sec. 3-28-1w .....Shut down 250 ft.
Magnolia Pet. Co.'s No. 1 Wise, NW cor. NW Sec. 36-28-2w .....Fishing 2,700 ft.
Blankenship et al's No. 1 Tuttle, SW cor. NW Sec. 1-27-1 .....Drlg. 1,215 ft.
Washabaugh et al's No. 1 Harrison, NW cor. NE NE Sec. 3-26-2w .....Shut down 350 ft.
Morgan & Tilley's No. 1 Fitzgerald, NW cor. NE Sec. 5-26-1w .....Shut down 800 ft., correct.
Twist et al's No. 1 Joseph, CNL SW SE Sec. 4-25-1w ....Drlg. 775 ft.
Connell & Slick's No. 1 Cross, NE cor. NE Sec. 27-25-1w..Plugging back to 2,730 ft.; sh 20 qts. 2,690-2,730 ft.
Miller Wentz' No. 1 Shaffer, NW cor. NE Sec. 9-27-2w ..Shut down 1,600 ft.
Kroder et al's No. 1 Harden, SW cor. NW SW Sec. 20-26-1e .....Shut down 1,100 ft.
Morgan et al's No. 1 Corn, SW cor. NE Sec. 28-26-1w ..Drlg. 3,260 ft.; underreaming lu
E. B. Shawver et al's No. 1 Reeves, SE cor. SW SE Sec. 19-28-1e .....Abandoned 3,635 ft.
Shell Pet. Corp.'s No. 1 Lygrisse, SE cor. NE Sec. 15-26-2e .....Underreaming 2,980 ft.
Washabaugh et al's No. 1 Harrison, NW cor. NE NE Sec. 3-26-2w .....Shut down 350 ft.
Sullivan et al's No. 1 Shelly, NW cor. NE SE Sec. 32-29-2e .....Drlg. 2,150 ft.
Hartman & Skaer et al's No. 1 Hutchinson, SE cor. SE SW Sec. 23-28-3w .....Drlg. 2,380 ft.
J. H. Tatlock's No. 1 Cook, SW cor. SW Sec. 25-28-2 ....Drlg. 1,390 ft.
Producers Oil Co.'s No. 1 Jones, SW cor. NE SE Sec. 31-26-2 .....Drlg. 1,975 ft.
G. L. Ramsey's No. 1 Schluesser, SW cor. SW Sec. 1-25-1 .....Drlg. 3,200 ft.
Jones & Kirk's No. 1 Sheppard, SE cor. NE Sec. 4-25-1 ..Drlg. 2,510 ft.
H. H. Patton's No. 1 Ryder, NE cor. NE Sec. 22-25-1 ....Drlg. 3,515 ft.
LaFont et al's No. 1 Carlton, C SE SE SW Sec. 24-28-1e..Rig on ground.
T. B. Slick's No. 1 Rosenhagen, C SW SE NE Sec. 33-27-4w .....Rig.
Frank Wahn's No. 1 Wilson, C NE NW SE Sec. 9-26-1w..Rig; moving in tools.
Patten & Wentz' No. 1 Swanson, NW cor. NE Sec. 6-26-2e.Drlg. 1,440 ft.
E. B. Hawkins' No. 1 Murfit, C SW Sec. 4-25-2w .....Drlg. 390 ft.
Connell & Slick's No. 1 Mohannah, C NE SE SE Sec. 3-25-1w .....Shut down 1,435 ft.
Reynolds & Rogers' No. 1 Updegraft, C SE SW SE Sec. 26-25-1w .....Rigging up.
Jones & Kirk's No. 1 Sheppard, SE cor. NE Sec. 4-25-1e..Drlg. 2,510 ft.

**SHERMAN COUNTY**

A. L. Henson et al's No. 1 Murry, NE cor. SE NW Sec. 22-7-40w .....Shut down 3,035 ft.

**STEVENS COUNTY**

Trees Oil Co.'s No. 1 Thompson, C NE SW Sec. 3-35-38w..Drlg. 500 ft.
W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-38w .....Started up 1,310 ft.

**SMITH COUNTY**

Ohio Oil Co.'s No. 1 Unknown, NE SE Sec. 30-1-13w ....Drlg. 4,010 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Unknown, NE cor. NE Sec. 4-2-13w .....Drlg. 3,225 ft.

**SUMNER COUNTY**

McCulloch Oil Co.'s No. 1 Teetle, SW cor. NE Sec. 29-34-1w .....Shut down 4,632 ft.
Gypsy Oil Co.'s No. 1 Williams, NW SE SW Sec. 18-35-3w .....Drlg. 4,660 ft.
Davidson and others' No. 1 Strickland, SW cor. SE Sec. 12-35-1w .....Rig.

**TREGO COUNTY**

Central Commercial Oil Co.'s No. 1 Ellis, NE cor. SW NE Sec. 20-13-21w .....Drlg. 3,649 ft.

**WASHINGTON COUNTY**

McCool & Vincent's No. 1 Linn, NW cor. NE Sec. 27-4-3..Rig.

**DOMESTIC EXPORTS OF PETROLEUM AND REFINED PRODUCTS**

| | | Month of February | | Two months end. Feb | |
|---|---|---|---|---|---|
| | | 1928 | 1929 | 1928 | 1929 |
| Petroleum: | | | | | |
| Crude | Bbls. | 1,243,421 | 1,678,300 | 2,468,951 | 3,649,9 |
| Crude | $ | 1,665,345 | 2,115,573 | 3,363,215 | 4,754,1 |
| Total refined petroleum | Bbls. | 9,024,012 | 8,925,192 | 20,035,031 | 19,785,3 |
| Total refined petroleum | $ | 31,317,427 | 35,017,913 | 68,353,329 | 77,235,2 |
| Gasoline, naphtha and other light products | Bbls. | 3,333,287 | 3,796,941 | 7,098,275 | 8,303,3 |
| | $ | 13,875,283 | 17,496,659 | 29,294,727 | 38,750,6 |
| Oils: | | | | | |
| Illuminating | Bbls. | 1,541,388 | 1,582,320 | 3,833,068 | 3,473,1 |
| Illuminating | $ | 6,891,421 | 6,696,129 | 16,452,204 | 14,351,2 |
| Gas and fuel | Bbls. | 3,309,238 | 2,674,584 | 7,328,233 | 6,017,4 |
| Gas and fuel | $ | 3,569,892 | 3,053,544 | 7,840,769 | 6,741,2 |
| Lubricating | Bbls. | 830,299 | 860,230 | 1,754,474 | 1,961,7 |
| Lubricating | $ | 6,848,356 | 7,619,359 | 14,492,079 | 17,050,4 |
| Other refined petroleum | Bbls. | 9,500 | 11,117 | 20,981 | 24,6 |
| Other refined petroleum | $ | 132,485 | 152,222 | 273,550 | 341,6 |
| Paraffin wax | Lbs. | 38,202,254 | 25,345,074 | 77,914,401 | 53,405,2 |
| Paraffin wax | $ | 1,369,643 | 1,324,133 | 2,928,478 | 2,891,2 |

## WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 42)

**CADDO COUNTY**

J. B. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w ..Shut down 150 ft.
W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w .....Shut down 3,394 ft.
English Drilling Co.'s No. 2 Fruitt, CNL NW SE Sec. 22-6-10w .....Abandoned.

**CLEVELAND COUNTY**

Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w .....Shut down 3,130 ft.
Phillips Pet. and T. B. Slick's No. 1 Hentleman, NE cor. NE Sec. 8-10-2w .....Fighting cave 5,510 ft.

**COAL COUNTY**

W. E. McGraw's No. 1 King, C SW NE Sec. 11-1-8e ....Rig.
Indian Territory Illuminating Oil Co.'s No. 1 Cook, SW cor. NW Sec. 10-1-11 .....Drlg. 6,880 ft.
Robert Galbreath and others' No. 1 Jones, SW cor. SE Sec. 24-1-9 .....Fishing 3,350 ft.
J. S. Cosden's No. 1 Richardson, NW cor. NE NE Sec. 6-2-8 .....Drlg. 1,460 ft.
McGinley & Sigler's No. 1 Willsey, NW cor. SE SE Sec. 7-2-8 .....Location.
E. W. Whitney's No. 1 Brown, C SE NE Sec. 10-2-8 ....Rig.

**COMANCHE COUNTY**

Everetts et al's No. 1 Hall, SE cor. NW Sec. 36-4-15w..Drlg. 1,795 ft.
Green and others' No. 1 Wilson, C NE SW Sec. 14-1-12w..Shut down 4,055 ft.
Wright et al's No. 1 Cross, NW cor. SW SW, Sec. 4-1-9w .....Abandoned.

**CUSTER COUNTY**

W. E. Witt's No. 1 Wellman, C SE Sec. 1-14-14w .....Rig and tools.

**DEWEY COUNTY**

Huckaby & McCoy's No. 1 Perfect, NE cor. NE Sec. 9-18-15w .....Shut down 4,500 ft.
Don Sifers' No. 1 Jordan, SW cor. NW Sec. 16-16-17w ..Completed 1,468-74 ft.; 5,000,000 ft. gas

**GARFIELD COUNTY**

E. L. Love and others' No. 1 White, SE cor. NW Sec. 9-24-6w .....Shut down 4,755 ft.

**GRADY COUNTY**

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w ....Spudded and shut down.
J. M. Henry and others' No. 1 Abraham, SE cor. NW Sec. 4-5-8w .....Rig.
J. B. Nichols' No. 1 Brake, SE cor. NE SE Sec. 7-5-7w..Abandoned 2,307 ft.
Wolfe et al's No. 1 Unknown, NW SE Sec. 15-12-18e ....Rig on ground.

**GRANT COUNTY**

Cowden and others' No. 2 Vollmer, CEL NE SW Sec. 22-25-4w .....Shut down 5,640 ft.
Larlo-Lathrop's No. 1 Cornell, NW cor. NW Sec. 24-28-3w .....Shut down 3,875 ft.

**GARWIN COUNTY**

Gilcrease Oil Co.'s No. 1 Kelly, SE cor. NW NE Sec. 36-3-3w .....Drlg. 1,930 ft.
Bison Oil Co.'s No. 1 Labor, NW cor. Sec. 17-1-2e .....Shut down 2,100 ft.

**GREER COUNTY**

S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-20w..Rig.

**HARMON COUNTY**

I. T. I. O. Co.'s No. 1 fee, C SW SE Sec. 17-5-24w ....Rig.

**HARPER COUNTY**

Hoffer Oil Co.'s No. 1 Cooper, NW cor. SE SE Sec. 12-25-22w .....Shut down 4,130 ft.

**HUGHES COUNTY**

Gypsy Oil Co.'s No. 1 McNevins, SW cor. Sec. 5-8-9e ..Cellar.
Independent & Kirkwood's No. 1 Scott, SW cor. SE SE Sec. 6-8-9e .....Spudding.
McGee Co.'s No. 1 fee, SE cor. Sec. 25-8-11e .....Rig on ground.
Gypsy Oil Co.'s No. 1 McGirt, NE cor. NW SW Sec. 21-6-8 .....Sand 3,310-30 ft.; hole full water; abandoned.

**JACKSON COUNTY**

Altus Oil Co.'s No. 1 Northington, NE cor. NE Sec. 4-1-20w .....Shut down 2,020 ft.

**KAY COUNTY**

Wentz Oil Corp.'s No. 1-A Ward, C NE SE SW Sec. 32-27-1e .....Drlg. 3,405 ft.

**KINGFISHER COUNTY**

McKenna & Crawford's No. 1 Sturgeon, NE cor. SW Sec. 27-16-6w .....Shut down 4,895 ft.

**KIOWA COUNTY**

Blue Mountain Oil Co.'s No. 1 Jones, SE cor. NW NW Sec. 17-5-14w .....Shut down 530 ft.
C. B. Cloyes' No. 1 Brazill, SW cor. NE Sec. 34-7-17w ..Drlg. 1,340 ft.
A. C. Varner and others' No. 1 Bonham, CSL NW NW Sec. 5-6-18w .....Abandoned 1,127 ft.
Merrick Oil Co.'s No. 1 Kelly, NW cor. SE Sec. 20-7-17w..Casing 8-in. 755 ft.
McWharter et al's No. 1 Sherwood, CWL NW NE Sec. 2-5-17w .....Shut down 416 ft.

**LATTIMER COUNTY**

Limestone Oil & Gas Co.'s No. 1 McMurray, SW cor. SW Sec. 15-5-18 .....Drlg. 3,425 ft.

**LINCOLN COUNTY**

Phillips Pet. Co.'s No. 1 Stephens, SE cor. NW Sec. 29-12-3 .....Rig.
Morgan & Flynn's No. 1 Finlay, SW cor. SW Sec. 19-16-6 .....Shut down 710 ft.
Wheeler & Mote's No. 1 Kemmer, NW cor. NE SW Sec. 2-16-5 .....Drlg. 3,165 ft.
Slusher's No. 1 Barnes, NW cor. Sec. 22-13-19e .....Machine.

**LOGAN COUNTY**

Haley & Smith's No. 1 Guier, SE cor. SW Sec. 33-18-3w ..Cleaning out 4,020 ft.
Oklahoma Oil Co.'s No. 1 Phillips, C NW SW Sec. 13-19-10w .....Rig on ground.

**McCLAIN COUNTY**

Spring Valley Oil Co.'s No. 1 Carr, SE cor. NE NW Sec. 16-10-3e .....Rig.
Tidal Oil Co.'s No. 1 Davis, C SE SE Sec. 31-5-2e .....Drlg. 3,340 ft.

**McINTOSH COUNTY**

Patterson and others' No. 1 Smith, SW cor. NW SE Sec. 32-9-16 .....Drlg. 5,470 ft.
Wolfe et al's No. 1 Unknown, NW cor. SE Sec. 15-12-18..Rig on ground.

**MAJOR COUNTY**

Landau & Mooney's No. 1 Parker, SE cor. NE NW Sec. 4-23-16w .....Show oil 1,235 ft.; shut down; abandoned.
Taft and others' No. 1 Turner, C NE NE Sec. 23-20-14w..Rig.
Wilson et al's No. 1 Unknown, NE cor. NE Sec. 4-23-16w..Shut down 510 ft.; abandoned.
Sinclair Oil & Gas Co.'s No. 1 Showalter, C SW SW Sec. 33-27n-16w .....Rig.

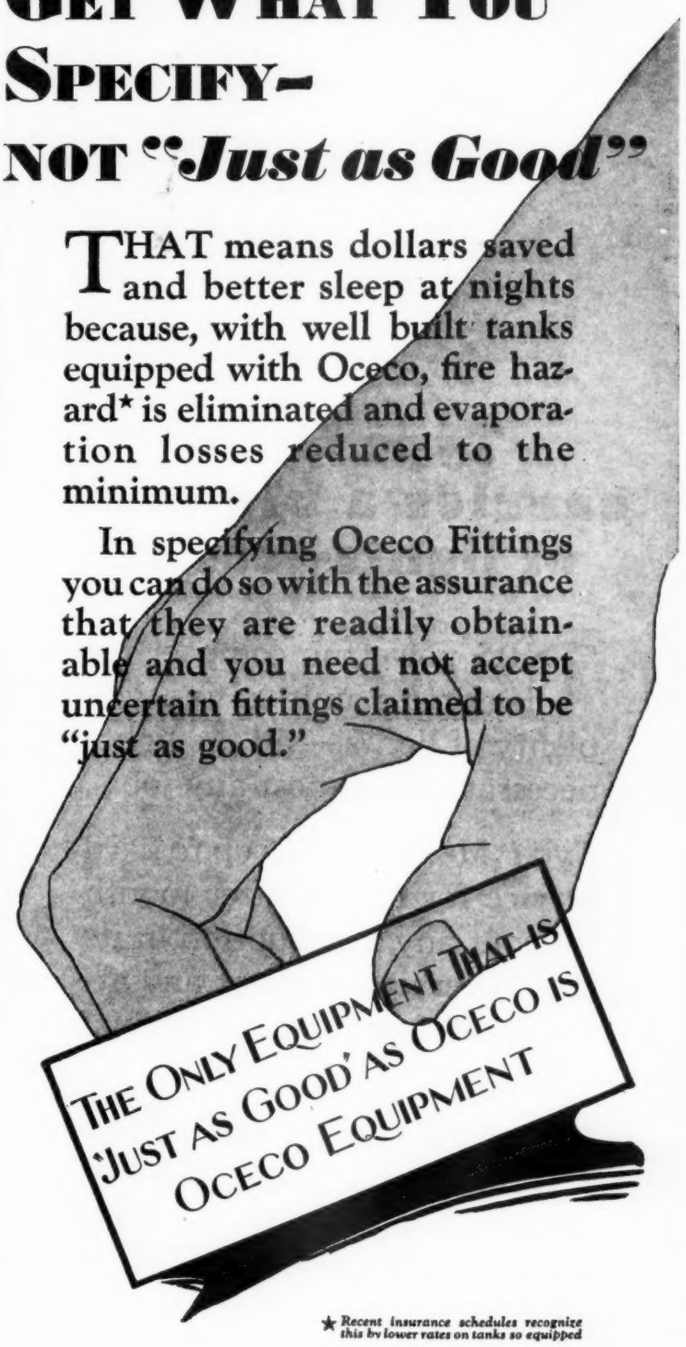
**MUSKOGEE COUNTY**

Big Drilling Co.'s No. 1 Jones, SW cor. SW Sec. 34-13-17 .....Shut down 400 ft.; abandoned.
L. Slusher's No. 1 Nave, NE cor. SW NW Sec. 20-15-20 .....Shut down 775 ft.
Elton & Lester's No. 1 Ellington, SW cor. NW SW Sec. 25-12-19 .....Drlg. 1,170 ft.
Elton & Lester's No. 1 Parker, C NW SW Sec. 31-12-19..Drlg. 1,280 ft.

**OKFUSKEE COUNTY**

B. Slick, Inc.'s No. 1 Berry, SE cor. NE SE Sec. 21-11-7 .....Fishing 4,585 ft.
Irwin and others' No. 1 Patterson, NW cor. SE Sec. 15-13-9 .....Location.


# GET WHAT YOU SPECIFY— NOT "*Just as Good*"




THAT means dollars saved and better sleep at nights because, with well built tanks equipped with Oceco, fire hazard★ is eliminated and evaporation losses reduced to the minimum.

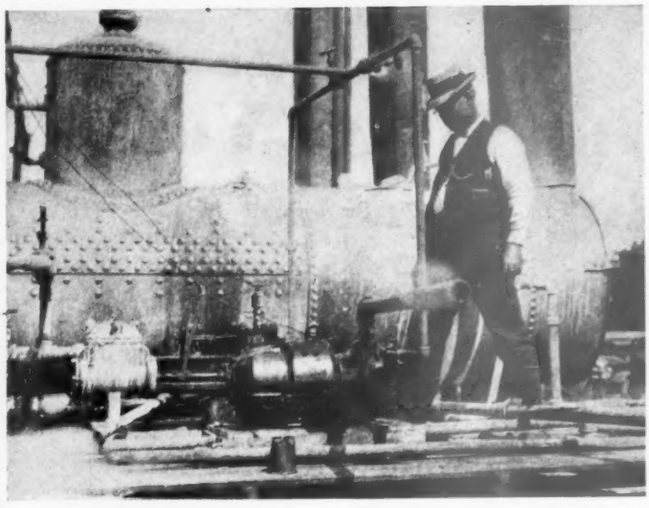
In specifying Oceco Fittings you can do so with the assurance that they are readily obtainable and you need not accept uncertain fittings claimed to be "just as good."

★ *Recent insurance schedules recognize this by lower rates on tanks so equipped*

THE OIL CONSERVATION ENGINEERING CO.
877 Addison Road Cleveland, Ohio

*Engineering and Sales Service:*

25 Broadway, New York — Tulsa Trust Bldg., Tulsa, Okla.
Box 552, Beaumont, Texas — Neilan, Schumacher & Co., Los Angeles, Cal.



# Type M-2-S carries a big load of lights—easily

THIS powerful, compact rig lighting unit gives you plenty of lights — all the lights necessary for almost any job.

Type "M-2-S" stands up to hard service for month after month without any interruption in its steady service, without any attention other than occasional oiling.

Operators who are using Pyle-National Type "M-2-S" are enthusiastic about its performance. It has everything.

*Send for bulletins with complete description.*

## The Pyle-National Company

**1334-1358 N. Kostner Avenue**
**Chicago, Ill., U. S. A.**

*Direct Factory Representative*

ALEX JOHNSON, 1000 Marine Bank Building, Houston, Texas

O&GJ 4-18 Gray


Prairie O. & G. Co.'s No. 1 Palmer, NW cor. NW NE Sec. 2-11-9 ..... Drlg. 1,570 ft.

**OKLAHOMA COUNTY**

Slick & Bailey's No. 1 Koester, C SE NE Sec. 18-13-3w .. Shut down 5,130 ft.
Cromwell & Franklin's No. 1 Thompson, SW cor. NE NE Sec. 15-12-3w ..... Granite 7,167-7,180 ft.; shut down
Hall & Briscoe's No. 1 Holmes, NE cor. SW SE Sec. 10-11-3w ..... Drlg. 4,750 ft.
Wall & McElroy's No. 1 Brady, NE cor. NE SW Sec. 6-11-2w ..... Rig.

**PITTSBURG COUNTY**

Kerr & Koy's No. 1 Hall, C NW NW Sec. 32-4-12 ..... Drlg. 1,800 ft.

**PONTOTOC COUNTY**

Denver P. & R. Co.'s No. 1 Roberts, SE cor. NE NE Sec. 36-5-4 ..... Drlg. 2,710 ft.

**POTTAWATOMIE COUNTY**

T. B. Slick's No. 1 Sailor, SE cor. NW NW Sec. 12-8-3 .. Water 5,339-60 ft.; hole full wtr.
Mid-Continent Petroleum Corp.'s No. 1 James, SE cor. SE Sec. 22-5-3 ..... Rig; drlg.; water 3,291-3,308 ft.
Simms Oil Co.'s No. 1 Lester, SE cor. NE NE Sec. 19-6-4 ..... T.V. 3,640 ft.; drlg. 3,675 ft.; show oil.

**SEMINOLE COUNTY**

Continental Oil Co.'s No. 1 Proctor, SE cor. NE NE Sec. 5-8-8e ..... Rig.
Prairie & Slick's No. 1 Miller, NW cor. NE Sec. 8-8-8e .. Rig.
Burke-Greis Oil Co.'s No. 1 Cyrus, SE cor. NE NW Sec. 13-9-7 ..... Wilcox 4,254-63 ft.; hole full water; drlg.
Gypsy Oil Co.'s No. 1 Andrews, NE SE NW Sec. 27-10-7 ..... Drlg. 4,468 ft.
McCulloch Oil Co.'s No. 1 McGilbray, SW cor. SW NE Sec. 4-8-8 ..... Fishing 3,412 ft.
McCulloch Oil Co.'s No. 1 Powell, NW cor. NW Sec. 11-6-5 ..... Rigging up rotary.
Marland Oil Co.'s No. 1 Strothers, NW cor. SE NE Sec. 5-10-7 ..... Wilcox 4,925-42 ft.; hole full water; P.B. to 4,595 ft. to list.
Magnolia Pet. Co.'s No. 1 Harjo, NE cor. SE Sec. 34-6-7 .. Drlg. 3,020 ft.
T. B. Slick and others' No. 1 Davis, NE cor. NE Sec. 26-6-6 ..... Water 4,303-4,357 ft.; hole full water; shut down.
McCulloch Oil Co.'s No. 1 Powell, NW cor. NW Sec. 11-6-5 ..... Rig.

**SEQUOYAH COUNTY**

Cooper & Badger's No. 1 Young, NW cor. NE NE Sec. 7-12-20 ..... Shut down.
Hunt and others' No. 1 Unknown, SE cor. NW SW Sec. 12-12-23 ..... Shut down 1,105 ft.
Buffington et al's No. 1 Melcher, C SW NW Sec. 31-12-24 ..... Drlg. 2,960 ft.

**WOODS COUNTY**

E. K. Miller's No. 1 Copenhavers, NW cor. NW Sec. 18-24-13w ..... Rigged up and shut down.
Gypsy-Prairie and others' No. 1 Thompson, SE cor. SW Sec. 10-25-15w ..... Drlg. 4,733 ft.
Sinclair Oil & Gas Co.'s No. 1 Thompson, C SW SW Sec. 33-27-16w ..... Rig and tools.

**WOODWARD COUNTY**

Sharon Oil Co.'s No. 1 Elmore, SW cor. SW Sec. 25-21-21w ..... Rig blown down 3,025 ft.
Prairie Oil & Gas Co. et al's No. 1 James, NE cor. NW Sec. 23-23-17w ..... Drlg. 2,090 ft.
Billy's Oil Co.'s No. 1 Watt, C SE Sec. 9-23-20w ..... Shut down 3,812 ft.
Burgoyne Brothers' No. 1 Merkins, SW cor SE NE Sec. 15-21-19w ..... Shut down 1,910 ft.
Wilson et al's No. 1 Unknown, NE cor. SW Sec. 4-23-16w ..... Shut down 520 ft.

**SOUTHERN OKLAHOMA**
**ATOKA COUNTY**

Wapanucka Oil Co.'s No. 1 Banks, CWL SE SE Sec. 28-2s-9 ..... Shut down 1,530 ft.

**BRYAN COUNTY**

Alexander & Oppenheimer's No. 1 Hampton, SE cor. NE Sec. 26-7s-11 ..... Abandoned 1,425 ft.
McNull & Gross' No. 1 Smith, CEL SE NW NE Sec. 11-6s-9e ..... Abandoned 375 ft.
Lambert et al's No. 1 Mermann, CEL SE NE NE Sec. 27-6s-9 ..... Drlg. 1,780 ft.
Yale Oil Syndicate's No. 1 Craige, C NW NE Sec. 36-9s-9e ..... Shut down 1,450 ft.

**CARTER COUNTY**

Devonian Oil Co.'s No. 1 Myer, NW cor. SE Sec. 19-5s-3w .. Abandoned 2,978 ft.
Avon-Dickey's No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 ..... Shut down 420 ft.
Schermerhorn Oil Co.'s No. 2 Jolliff, NE NW Sec. 24-5s-1e ..... Fishing 4,536 ft.
Humble Oil & Ref. Co.'s No. 1 Chapman, C SW NW NW Sec. 1-4-3 ..... Drlg. 820 ft.

**CHOCTAW COUNTY**

Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6-19 ..... Shut down 1,346 ft.

**COTTON COUNTY**

Perkins & Callum's No. 1 Tucker, NW NE Sec. 11-3-10w ..... Drlg. 1,932 ft.
Pewlin Pet. Co.'s No. 1 King, SW SE Sec. 22-3-9w .... Spudding.
Amerada Pet. Corp.'s No. 1 Dulaney, SE cor. NW NW Sec. 31-4-9w ..... Drlg. 1,290 ft.
Consolidated Oil Co.'s No. 1 Indian Land, NE SW Sec. 11-3-12w ..... Drlg. 520 ft.
Consolidated Oil Co.'s No. 1 Duvall, NW cor. NW Sec. 26-3-11w ..... Abandoned 2,513 ft.
Pierce & Brown's No. 1 Hertzler, NW cor. NW Sec. 31-2-12w ..... Shut down 2,716 ft.
Shasta Oil Co.'s No. 1 Pah-pe-chi, NE cor. NE Sec. 34-1s-11w ..... Shut down 2,502 ft.
White et al's No. 1 Woodruff, NW NE SE 18-3-11w .... Rig.

**JEFFERSON COUNTY**

Amerada Pet. Corp.'s No. 1 Emerson, NW cor. SE SW Sec. 28-5s-8w ..... Abandoned 4,516 ft.

**JOHNSTON COUNTY**

Smith & Knisely's No. 1 Lane, E half Sec. 29-1-7 ..... Shut down 1,530 ft.
Bush Creek Oil Co.'s No. 1 Kirby, SE cor. NE NW Sec. 9-4-7 ..... Shut down for casing 40[illegible]

**MARSHALL COUNTY**

Moore et al's No. 1 McDuffy, SW cor. NE SW Sec. 3-7s-6 ..... Shut down 680 ft.

**MURRAY COUNTY**

Bison Oil Co.'s No. 1 Labor, NW cor. NW Sec. 17-1-2 .. Abandoned 2,100 ft.
Alter and others' No. 1 Johnson, SW cor. NW Sec. 14-4-7 .. Spudded and shut down.

**STEPHENS COUNTY**

Stahl & Burris' No. 1 Jefferson, SE cor. NE Sec. 29-2-5w ..... Abandoned 3,012 ft.
Ellis Drilling Co.'s No. 1 Yates, SW NE Sec. 4-3-7w .... Rig.

**TILLMAN COUNTY**

Burr Lambert et al's No. 1 Zivlig, C NW Sec. 25-1-18w .. Rig.
Bray and others' No. 1 Barker, NE cor. SW NW Sec. 9-1-15w ..... Abandoned 805 ft.
Landfair and others' No. 1 Smith, SE SW SE Sec. 6-2s-15w ..... Shut down 2,535 ft.
Allen & Treadwell's No. 1 Howell, NW cor. SE Sec. 13-1-17w ..... Drlg. 880 ft.

**OKLAHOMA PANHANDLE**

Magnolia Pet. Co.'s No. 1 School, C SE NE Sec. 22-5-5 .. Drlg. 1,715 ft.
Skaer's No. 1 Hitch, NW cor. Sec. 25-1-15e ..... Rig.
Three Way Oil Co.'s No. 1 Cane, SW NW Sec. 11-1-18e .. Shut down 3,350 ft.

## OKLAHOMA FIELDS

(Continued from Page 42)

1 Petraseck, NE cor. SW, Section 12-19-9. William Sherry and others' No. 1 Barnett, NE cor. SW, Section 20-18-10, is a rig. C. G. Tibbens' No. 40 Conesenny, CSL SE NW, Section 30-15-9, is drilling at 600 feet.

Smith & Steinberger's No. 1 Asbury, NW cor. NE SE, Section 8-19-7, is dry and abandoned at 3,503 feet. Winemiller and others' No. 1-A Colbert, SW cor. SE, Section 9-19-7, is a dry hole at 2,861 feet. Dixie Oil Co.'s No. 6 Dickinson, SE cor. Section 7-19-9, made 2,500,000 feet of gas in sand at 2,145-63 feet. Schermerhorn Oil Co.'s No. 1 Barker, SE cor. NW NW, Section 14-18-10, has been abandoned at 3,175 feet. Devonian Oil Co.'s No. 2 Brown, CEL W half SE NW, Section 4-18-12, made a 10-bbl. well in sand at 2,173-85 feet. Red Bank Oil Co.'s No. 1-A Page, SW cor. SE NE, Section 34-16-10, is dry and abandoned at 3,135 feet.

**Cotton County**

Cullum & Jenkins' No. 4 Smith, SE cor. SW SE, Section 34-1s-10w, is dry and abandoned at 2,204 feet.

**Garvin County**

Magnolia Petroleum Co.'s No. 1 Pierce, NE cor. SW NW, Section 14-1-3w, was completed for 9 bbls. in sands at 1,542-1,600 feet.

**Haskell County**

Sans Bois Gas Co.'s No. 1 Hurst, SW cor. NW SE, Section 32-9-21, is dry and abandoned at 2,100 feet.

**Harmon County**

S. M. Stauffer made location for No. 1 Cattleman, NW cor. SE, Section 8-4-26w.

**Jefferson County**

O. V. Beck's No. 2 Seay, SE cor. SW NW SE, Section 34-6s-5w, is drilling at 1,650 feet. Humble Oil & Refining Co.'s No. 2 Seay, NE cor. NW NW NE, Section 3-7s-5w, is pumping 38 bbls. from sand at 1,215-23 feet.

**Kay County**

Harris & Haun's No. 1 Brown, SW cor. Section 9-27-1w, is a rig being built to deepen an old well.

**Lincoln County**

Magnolia Petroleum Co.'s No. 1 Mitchell, NE cor. Section 33-14-6, is spudding. Mid-Continent Petroleum Corp.'s No. 1 Tipton, SE cor. NE NW, Section 13-15-5, is a dry hole at 4,468 feet.

**Muskogee County**

H. E. Williams' No. 1-A Monday, CNL SE NE, Section 17-15-17, is drilling at 1,260 feet. W. C. Cushing's No. 1 Myers, SE cor. SW SW, Section 22-15-17, is drilling deeper at 2,460 feet. Robinson Brothers moved a machine to the location for No. 2 Lewis, SW cor. NW NE, Section 8-13-16. R. & R. Drilling Co.'s No. 1-A Brown, SE cor. Section 18-13-16, is drilling at 200 feet.

Bryan Petroleum Co.'s No. 1-A Simmons, SW cor. NW SW SW, Section 3-15-15, made 25 bbls. in sand at 1,572-79 feet. J. A. Evans' No. 1 Thompson, NW cor. NW SW, Section 2-14-19, is dry and abandoned at 1,003 feet after deepening. No. 1 Hibb, NW cor. SW, Section 11-14-19, has been abandoned at 492 feet. J. A. Routt's No. 1 Timberlake, NW cor. SE SE, Section 11-14-19, is dry and abandoned at 1,050 feet. Colton & Lester's No. 1 Pettitt, SW cor. NW SW, Section 25 12-19, has been abandoned at 2,170 feet.

**Okfuskee County**

The Prairie Oil & Gas Co. made location for No. 2 Miracle, SE cor. SE SW, Section 29-12-10. B. & B. Drilling Co.'s No. 1 Morran, NW cor. SE, Section 4-12-11, is dry and abandoned at 3,825 feet. Atlantic Oil Producing Co.'s No. Micco, SW cor. Section 12-10-11, made bbls. from sand at 2,072-84 feet.

**Okmulgee County**

Goodman and others' No. 1-A Scott, NW cor. SE, Section 12-15-14, has been abandoned at 435 feet. Moffett and others' No. 1 Roger, NE cor. NW NW, Section 10-11-12, was completed for 3,000,000 feet of gas in sand at 2,764-67 feet.

**Osage County**

Wrightsman Petroleum Corp. is moving rig to the location for No. 1, NW cor. NE NW NW, Section 20-26-9. Maryland Production Co. and Gypsy Oil Co.'s No. 1, SE cor. NE, Section 21-24-7, is a rig on the ground. C. B. Peters has a machine on the location for No. 2, NW cor. NE SE, Section 18-24-8. L. G. Stanley has a machine on the location for No. 2, NE cor. SE SE, Section 14-21-8. Mid-Continent Petroleum Corp.'s No. 1, NW cor. SE, Section 34-20-10, is a rig on the ground.

Indian Territory Illuminating Oil Co.'s No. 1, NE cor. SE, Section 26-26-8, is dry and abandoned at 1,704 feet. McCune & Wormser's No. 12, SE cor. NW, Section 15-24-8, made 10 bbls. from sand at 464-95 feet. Stoner Brothers' No. 3, CSL N half NW, Section 31-24-9, made a 5-bbl. pumper in Bartlesville sand at 2,122-43 feet. H. H. Mundy and others' No. 1, NE cor. SE, Section 10-21-8, has been completed for 6 bbls. in Cleveland sand at 1,720-60 feet after plugging back from 2,025 feet. Oklahoma Natural Gas Corp.'s No. 1,674, SW cor. NW, Section 13-21-11, is dry and abandoned at 2,224 feet. H. H. Mundy and others' No. 1, SW cor. NE, Section 4-20-9, is dry and abandoned at 527 feet.

**Pawnee County**

McMan and others' No. 1 Johnson, CWL SE SE, Section 27-20-9, is a machine on the location. Roy Sears moved a machine in for No. 3 Wiggs, SW cor. NE NW, Section 35-20-9. Washoma Oil & Gas Co.'s No. 1 Buffalo, SE cor. NW, Section 33-22-5, made a 10-bbl. well in sand at 3,134-46 feet. Swift & Rush's No. 1-A Smelser, CNL SE NW, Section 35-20-9, has been completed for 250 bbls. in Bartlesville sand at 1,960-2,022 feet.

**Payne County**

Home Gas Co. made location for No. 1 Grass, NW cor. SE, Section 13-18-5.

**Stephens County**

Shell Petroleum Corp.'s No. 4 Cook "N," NW cor. NE SW, Section 30-1-8w, is cleaning out to deepen from 2,046 feet. Magnolia Petroleum Co.'s No. 22 Kagay, NE cor. SW, Section 34-1s-8w, is a location. Rig timbers are on the ground for No. 23 Kagay, NE cor. NW NE SW, Section 34-1s-8w. Clark & Cowden's rig is up for No. 4 Davidson, NW cor. SW, Section 13-1s-4w. Magnolia Petroleum Co.'s No. 9 M. Green, SW cor. NW, Section 13-1s-4w, is a rig under construction. Ven-Mex Oil Co. and Mid-Continent Petroleum Corp.'s rig is up for No. 3 Gilworth, NE cor. SE NW, Section 2-2s-8w. Pace and others' No. 2 Donham, SW cor. SE NE, Section 11-2s-8w, is rigging up. Location has been made for No. 1 Bristowe, SW cor. NW, Section 18-2s-7w.

Stahl & Burris' No. 1 Jefferson, SE cor. NE NW, Section 2-1-7w, has been abandoned at 3,012 feet. Magnolia Petroleum Co.'s No. 10 Stevens, NW cor. NE NW, Section 33-1s-8w, is dry and abandoned at 2,720 feet. American Pipe Line Co.'s No. 4 Nigh, SW cor. SE NW, Section 34-1s-8w, is flowing 100 bbls. from sand at 1,856-61 feet. Harris & McNeil's No. 1 McCullom, NW cor. SW NE, Section 24-1s-4w, made 28 bbls. from sands at 2,772-3,058 feet. Magnolia Petrolem Co.'s No. 3 Peck, NE cor. SW NE, Section 13-2s-8w, is producing 42 bbls. from sand at 1,458-68 feet. Pace and others' No. 1 Cooper, CWL SW NE, Section 16-2s-7w, is dry and abandoned at 1,931 feet. Davidson and others' No. 1 fee, SE cor. NW NE, Section 5-2s-4w, has been abandoned at 1,375 feet.

**Wagoner County**

Oklahoma Natural Gas Co.'s No. 4 Cinda, NW cor. NE NW SW, Section 22-18-17, is dry and abandoned at 830 feet.

**Hughes County**

Gypsy Oil Co.'s No. 1 McNevins, SW cor. Section 5-8-9, is a cellar. McGee Brothers moved the rig in for No. 1 Smith, SE cor. SW, Section 25-8-11. Champlin Oil & Refining Co.'s No. 1 M. Long, SW cor. Section 33-9-9, made 9,000,000 feet of gas in Cromwell sand at 3,648-70 feet. Howard Petroleum Co.'s No. 1 Harjo, NW cor. SE, Section 25-8-10, is dry and abandoned at 4,697 feet. Homaokla Oil Co.'s No. 7 Berry, SW cor. NE SE, Section 19-5-8, Allen Pool, was completed for 265 bbls. in Cromwell sand at 2,770-89 feet. W. R. Ramsey's No. 5 Whitney, SW cor. NE SW, Section 19-5-8, made 140 bbls. from Cromwell sand at 2,620-45 feet.

**Pontotoc County**

LaSalle Oil Co. has the rig up for No. 1 Hatcher, NW cor. SE, Section 28-5-5. Homaokla Oil Co. is rigging up machine for No. 3 Ritchie, C N half SE, Section 1-4-7.

**Pottawatomie County**

Pure Oil Co.'s No. 1 Bebee, SE cor. SW, Section 6-8-5, Maud Pool, is dry and abandoned at 4,455 feet in Wilcox sand. The Texas Company's No. 6 Calvin, SE cor. SW SE, Section 7-8-5, swabbed 340 bbls. from Hunton lime at 4,149-75 feet. Amerada Petroleum Corp.'s No. 3 Gossland, NE cor. SE SW, Section 8-8-5, swabbed 155 bbls. from Hunton lime at 4,138-88 feet. Shell Petroleum Corp.'s No. 2 Wiley, NW cor. Section 8-8-5, has been abandoned at 3,980 feet.

Amerada Petroleum Corp.'s No. 2 Wallace, NW cor. SW SW, Section 17-8-5, produced 255 bbls. from Hunton lime at 4,046-65 feet. Laurel Oil Co.'s No. 3 Billington, SW cor. NE NW, Section 18-8-5, flowed 2,400 bbls. from Hunton lime at 4,127-51 feet. Mid-Continent Petroleum Corp.'s No. 1 Shelton, SW cor. SE NE, Section 18-8-5, made 225 bbls. in Misener sand at 4,025-42 feet. Pure Oil Co.'s No. 7 Lindley, NE cor. SW SE, Section 18-8-5, swabbed 10 bbls. from Hunton lime at 4,106-35 feet. No. 8 Lindley, SE cor. NW SE, Section 18-8-5, was completed for 51 bbls. in Hunton lime at 4,057-72 feet.

Sinclair Oil & Gas Co.'s No. 9 Bellars, SE cor. NE NE, Section 19-8-5, produced 235 bbls. from Hunton lime at 4,166-68 feet. No. 10 Bellars, NE cor. SE NE, Section 19-8-5, flowed 589 bbls. from Hunton lime at 4,212-35 feet. Superior Oil Corp.'s No. 2 Cloude, NW cor. SW SW, Section 13-7-4, drilled to 4,214 feet in Simpson sand and plugged back to 4,206 feet where it swabbed 100 bbls. Westheimer & Daube's No. 7 Freid, NE cor. SE NW, Section 24-7-4, is dry and abandoned at 4,329 feet in Wilcox sand.

McCulloch Oil Co.'s No. 6 Smith, NE cor. SW SE, Section 25-7-4, St. Louis Pool, was completed for 270 bbls. in Simpson sand at 4,370-79 feet. Sinclair Oil & Gas Co.'s No. 1 Brandenburg, SE cor. SW SW, Section 7-7-5, flowed 3,200 bbls. from Wilcox sand at 4,055-66 feet. Indian Territory Illuminating Oil Co. and Sinclair Oil & Gas Co.'s No. 1 Woodard, SW cor. NE NE, Section 18-7-5, has been completed for 130 bbls. at 4,145 feet in Simpson sand after plugging back from 4,155 feet in Wilcox sand. Magnolia Petroleum Co.'s No. 3 Brandenburg, SE cor. NW NW, Section 18-7-5, made 993 bbls. from Wilcox sand at 4,282-91 feet.

Sinclair Oil & Gas Co.'s No. 3 Nesbit, NW cor. NE NW, Section 18-7-5, flowed 5,960 bbls. from Wilcox sand at 4,105-18 feet. No. 4 Nesbit, SW cor. NE NW, Section 18-7-5, made 2,085 bbls. from Wilcox sand at 4,166-68 feet. Magnolia Petroleum Co.'s No. 4 C. Youts, SW cor. NE SW, Section 20-7-5, was completed for 10 bbls. after drilling to 4,537 feet in Wilcox sand and then plugging back to 4,496 feet in Simpson sand. Shell Petroleum Corp.'s No. 1 Livingston, SW cor. SE, Section 33-7-5, is dry and abandoned at 4,580 feet in Wilcox sand.

**Seminole County**

Amerada Petroleum Corp. made location for No. 1 Nicey, SW cor. SE SE, Section 3-9-6. Devonian Oil Co. has the rig up for No. 1 Harjo, NE cor. NW NW, Section 18-9-7. Gypsy Oil Co. made location for No. 2 Cozad, NE cor. SW, Section 27-7-6, Little River Pool. Sinclair Oil & Gas Co. has the rig on the ground for No. 1 I. Davis "B," SE cor. NE SW, Section 7-6-8, north of Allen Pool.

Magnolia Petroleum Co.'s No. 4 Hyde, SE cor. NW, Section 13-9-5, Earlsboro Pool, made 2,869 bbls. in Wilcox sand at 4,216-28 feet. Independent Oil & Gas Co.'s No. 5 Lawson, NW cor. SE SE, Section 1-8-5, Mission Pool, was completed for 805 bbls. in Wilcox sand at 4,270-87 feet. Barnsdall Oil Co.'s No. 5 Coker, NW cor. NE SW, Section 11-8-5, made 613 bbls. in Wilcox sand at 4,362-72 feet. Empire Oil & Refining Co.'s No. 2 Cluck, NW cor. SE, Section 11-8-5, made 382 bbls. from Wilcox sand at 4,142-58 feet. No. 4 Cluck, NW cor. SW NE, Section 11-8-5, was completed for 1,261 bbls. in Wilcox sand at 4,262-73 feet.

Sinclair Oil & Gas Co.'s No. 1 Bean, SE cor. NE NW, Section 11-8-5, made 780 bbls. from Wilcox sand at 4,257-63 feet. Magnolia Petroleum Co.'s No. 2 Killing, SW cor. NW NW, Section 14-8-5, is dry and abandoned at 4,325 feet in Wilcox sand. Gypsy Oil Co.'s No. 1 Fife, NE cor. SW NW, Section 14-8-5, Carr City Pool, has been abandoned at 4,480 feet in Wilcox sand. The Prairie Oil & Gas Co. and T. B. Slick's No. 5 James, SW cor. SE SW, Section 6-9-6, Earlsboro Pool, made 5 bbls. but was abandoned at 4,462 feet in Wilcox. The Prairie Oil & Gas Co.'s No. 1 Franks, NW cor. NE, Section 35-9-6, pumped 456 bbls. from sand at 4,124 feet.

No. 1 Routt, NW cor. NE NW, Section 7-9-6, is dry and abandoned at 4,328 feet in Wilcox sand. No. 5 Billington, NE cor. SE NW, Section 11-8-5, Carr City Pool, made 580 bbls. from Wilcox sand at 4,453-58 feet. Amerada Petroleum Corp.'s No. 2 Rice, SE cor. Section 5-8-6, Mission Pool, was completed for 610 bbls. in Wilcox sand at 4,250-56 feet. W. B. Pine's No. 2 Harjo, NE cor. SW SE, Section 6-8-6, made 980 bbls. from Wilcox sand at 4,746-50 feet.

**Seminole Production**

Production of pools in the Seminole area by companies and leases for April 11 follows:

**Little River Pool**

| Company, farm— | Location | Wells | Prod. |
|---|---|---|---|
| Amerada: | | | |
| Nitey | 2-7-6 | 3 | 570 |
| Amerada-Wilcox: | | | |
| Fore | 35-8-6 | 2 | 345 |
| Barnsdall: | | | |
| Cotcha | 23-7-6 | 2 | 570 |
| Hotulke | 22-7-6 | 3 | 205 |
| Walker | 4-7-6 | 1 | 130 |
| Blackwell: | | | |
| Baker | 11-7-6 | 4 | 1,055 |
| Nitey | 35-8-6 | 5 | 545 |
| Talley | 14-7-6 | 4 | 725 |
| Bryan & Emery: | | | |
| Walker | 4-7-6 | 1 | 13 |
| Carter: | | | |
| Cotcha, M. | 23-7-6 | 3 | 85 |
| Cudjo, L. | 23-7-6 | 2 | 115 |
| Fish | 36-8-6 | 4 | 595 |
| Harjo, C. | 11-7-6 | 3 | 2,180 |
| Harjo, M. | 13-7-6 | 4 | 1,435 |
| Jackson | 11-7-6 | 4 | 1,025 |
| Larney | 24-7-6 | 4 | 2,135 |
| Lena | 10-7-6 | 1 | 715 |
| Moore | 11-7-6 | 2 | 315 |
| Tewee | 14-7-6 | 6 | 1,030 |
| Thomas | 11-7-6 | 1 | 515 |
| Wilson | 12-7-6 | 1 | 230 |
| Champlin: | | | |
| Tewee | 14-7-6 | 2 | 525 |
| Continental: | | | |
| Cosar | 36-8-6 | 7 | 1,287 |
| Cosar, M. | 25-8-6 | 1 | 428 |
| Continental & Fisher: | | | |
| Milsey | 11-7-6 | 2 | 550 |
| Empire: | | | |
| Charty | 24-7-6 | 1 | 89 |
| Coker | 13-7-6 | 2 | 1,207 |
| Sandlin | 3-7-6 | 1 | 15 |
| Gypsy: | | | |
| Brown, C. | 33-8-6 | 2 | 0 |
| Brown, M. | 33-8-6 | 1 | 1,005 |
| Campbell | 33-7-6 | 2 | 30 |
| Conard | 22-7-6 | 2 | 305 |
| Cosar, W. | 36-8-6 | 1 | 162 |
| Cotcha | 23-7-6 | 8 | 1,870 |
| Denmark | 11-7-6 | 4 | 1,550 |
| Hotulke | 14-7-6 | 10 | 820 |
| Mungee | 1-7-6 | 1 | 5 |
| Payne | 5-7-7 | 1 | 0 |
| Pottie | 35-8-6 | 4 | 570 |
| Renton | 11-7-6 | 3 | 220 |
| Independent: | | | |
| Carpenter | 27-7-6 | 1 | 2,134 |
| Davis, R. | 13-7-6 | 4 | 1,410 |
| Tewee | 14-7-6 | 6 | 1,429 |
| Williams | 15-7-6 | 1 | 255 |
| Independent & Highway: | | | |
| Harris | 23-7-6 | 8 | 1,409 |
| Independent & White Eagle: | | | |
| Davis | 2-7-6 | 4 | 505 |
| I. T. I. O.: | | | |
| Campbell | 1-7-6 | 1 | 149 |
| Dungan | 35-8-6 | 3 | 560 |
| House, M. A. | 1-7-6 | 1 | 43 |
| House, W. E. | 1-7-6 | 1 | 5 |
| House "B" | 2-7-6 | 4 | 1,020 |
| Hull | 26-8-6 | 3 | 146 |
| Jackson | 1-7-6 | 3 | 1,034 |
| McCulla | 1-7-6 | 3 | 780 |
| Nitey | 2-7-6 | 5 | 123 |
| Phoebe "A" | 36-8-6 | 2 | 44 |
| Phoebe "B" | 36-8-6 | 3 | 176 |
| Reed | 1-7-6 | 1 | 6 |
| Soketheche | 1-7-6 | 3 | 430 |
| Magnolia: | | | |
| Cruse | 2-7-6 | 4 | 208 |
| Denby | 11-7-6 | 4 | 226 |
| Harjo, A. | 14-7-6 | 2 | 120 |
| Harjo, B. | 14-7-6 | 2 | 220 |
| Pottie | 35-8-6 | 4 | 65 |
| Reed, E. | 31-8-7 | 1 | 32 |
| Reed, I. | 22-7-6 | 3 | 475 |
| Marland & Shaeffer: | | | |
| Harrison | 4-7-7 | 1 | 406 |
| McCulloch & Sands: | | | |
| Harrison | 4-7-6 | 1 | 6 |

(Continued on next page)

| Company, farm— Location | Wells | Prod. |
|---|---|---|
| **Mid-Continent:** | | |
| Brunner ..... 11-7-6 | 4 | 210 |
| Eleck ..... 23-7-6 | 1 | 70 |
| Smith ..... 5-7-7 | 3 | 4,000 |
| Wadsworth ..... 36-8-6 | 7 | 340 |
| **W. B. Pine:** | | |
| Hoyecha ..... 26-8-6 | 6 | 1,403 |
| **Pine-Phillips:** | | |
| Pottie ..... 35-8-6 | 1 | 305 |
| **Prairie:** | | |
| Chilcoat ..... 25-8-6 | 3 | 525 |
| Dungan ..... 35-8-6 | 1 | 5 |
| Gibson ..... 14-7-6 | 5 | 1,255 |
| Harris ..... 14-7-6 | 4 | 825 |
| House ..... 2-7-6 | 4 | 150 |
| Johnson ..... 24-7-6 | 1 | 740 |
| Lustey ..... 5-7-7 | 2 | 170 |
| Moppin ..... 24-7-6 | 2 | 1,080 |
| Talley ..... 14-7-6 | 4 | 880 |
| **Prairie & Amerada:** | | |
| Sunny ..... 14-7-6 | 6 | 1,845 |
| **Pure:** | | |
| Brinson ..... 24-7-6 | 3 | 1,027 |
| Cotcha ..... 14-7-6 | 10 | 2,053 |
| Harjo ..... 11-7-6 | 4 | 1,218 |
| Hollins ..... 11-7-6 | 1 | 168 |
| **Reiter-Foster:** | | |
| Bunyard ..... 14-7-6 | 4 | 830 |
| Jefferson ..... 31-7-6 | 1 | 15 |
| **Shaeffer:** | | |
| Narcombe ..... 36-8-6 | 2 | 260 |
| **Shell:** | | |
| Caesar ..... 11-7-6 | 1 | 52 |
| Glass ..... 26-7-6 | 1 | 0 |
| Hotulke ..... 23-7-6 | 4 | 630 |
| Jeffries ..... 32-8-7 | 1 | 8 |
| Johnson ..... 13-7-6 | 4 | 2,344 |
| **Sinclair:** | | |
| Blanton ..... 11-7-6 | 1 | 32 |
| Cosar ..... 30-8-6 | 3 | 985 |
| Haney ..... 12-7-6 | 1 | 52 |
| Tewee ..... 14-7-6 | 2 | 1,190 |
| **Sinclair & Kingwood:** | | |
| Pompey ..... 24-7-6 | 1 | 110 |
| **Skelly:** | | |
| Carl ..... 14-7-6 | 2 | 1,705 |
| Reed ..... 13-7-6 | 2 | 890 |
| Williams ..... 15-7-6 | 2 | 620 |
| Wood ..... 26-7-6 | 1 | 180 |
| **Skelly & Pine:** | | |
| Coker ..... 1-7-6 | 1 | 682 |
| **Snowden-McSweeney:** | | |
| Tiger ..... 13-7-6 | 2 | 355 |
| **Superior:** | | |
| Potulka ..... 31-8-6 | 1 | 0 |
| Soketheche ..... 1-7-6 | 1 | 2 |
| **Texas:** | | |
| Brooks ..... 25-8-6 | 1 | 20 |
| Coker ..... 1-7-6 | 5 | 205 |
| Janey ..... 11-7-6 | 3 | 905 |
| **Texas & Independent:** | | |
| Hotulke ..... 23-7-6 | 4 | 1,185 |
| Hotulke ..... 22-7-6 | 2 | 25 |
| **Tidal:** | | |
| House ..... 1-7-6 | 2 | 250 |
| Johnson ..... 1-7-6 | 1 | 24 |
| **Twin State:** | | |
| Lowe ..... 25-8-6 | 1 | 50 |
| Total ..... | 326 | 70,463 |

**Maud Pool**

| | | | |
|---|---|---|---|
| **Amerada:** | | | |
| Ballard ..... | 1-8-4 | 1 | 190 |
| Fehlig ..... | 7-8-5 | 1 | 240 |
| Gossland ..... | 8-8-5 | 3 | 360 |
| Hallum ..... | 1-8-4 | 3 | 2,500 |
| Gravel ..... | 1-8-4 | 1 | 20 |
| **Amerada & Barnsdall:** | | | |
| Wallace ..... | 17-8-5 | 2 | 235 |
| **Amerada & Hull:** | | | |
| Green ..... | 20-8-5 | 1 | 205 |
| **Darby:** | | | |
| Ketcham ..... | 19-8-5 | 1 | 14 |
| **Gypsy:** | | | |
| Bourassa ..... | 7-8-5 | 4 | 237 |
| Miller ..... | 18-8-5 | 7 | 1,107 |
| **Independent:** | | | |
| Harding ..... | 18-8-5 | 5 | 907 |
| **I. T. I. O.:** | | | |
| State ..... | 16-8-5 | 1 | 0 |
| **Laurel O. & G.:** | | | |
| Billington ..... | 18-8-5 | 3 | 500 |
| **Magnolia:** | | | |
| Billington ..... | 8-8-5 | 3 | 48 |
| Green ..... | 20-8-5 | 1 | 235 |
| **Marland & Shell:** | | | |
| Everett ..... | 18-8-5 | 1 | 351 |
| **Mid-Continent:** | | | |
| Shelton ..... | 18-8-5 | 1 | 120 |
| **Phillips:** | | | |
| Wallace ..... | 17-8-5 | 1 | 0 |
| **Phillips et al:** | | | |
| Hudson ..... | 19-8-5 | 4 | 387 |
| **Pine:** | | | |
| Lingefelt ..... | 18-8-5 | 1 | 105 |
| **Prairie:** | | | |
| Campbell ..... | 18-8-5 | 6 | 525 |
| **Pure:** | | | |
| Lindly ..... | 18-8-5 | 8 | 311 |
| Urbansky ..... | 19-8-5 | 2 | 255 |
| Wiley ..... | 8-8-5 | 4 | 2,025 |
| **Sinclair:** | | | |
| Bellars ..... | 19-8-5 | 10 | 1,340 |
| Calvin ..... | 7-8-5 | 1 | 40 |
| Lewis ..... | 6-8-5 | 2 | 160 |
| **Skelly & Margay:** | | | |
| Lingefelt ..... | 18-8-5 | 4 | 175 |
| **Texas:** | | | |
| Calvin ..... | 7-8-5 | 7 | 515 |
| **Tidal:** | | | |
| Dunn ..... | 12-8-4 | 1 | 70 |
| Everett ..... | 18-8-5 | 1 | 35 |
| Smith ..... | 8-8-5 | 1 | 165 |
| **Twin State:** | | | |
| Calvin ..... | 7-8-5 | 2 | 140 |
| **Wilcox:** | | | |
| Smith ..... | 8-8-5 | 2 | 944 |
| **Slick-White Eagle:** | | | |
| Villins ..... | 20-8-5 | 1 | 110 |
| Total ..... | | 99 | 14,571 |

**Carr City Pool**

| | | | |
|---|---|---|---|
| **Barnsdall:** | | | |
| Coker ..... | 11-8-5 | 6 | 1,880 |
| Fife ..... | 14-8-5 | 2 | 30 |
| **Carter:** | | | |
| Coker ..... | 2-8-5 | 1 | 1,255 |
| **Empire:** | | | |
| Cluck ..... | 11-8-5 | 4 | 3,413 |
| **Gypsy:** | | | |
| Coker ..... | 10-8-5 | 1 | 62 |
| Fife ..... | 14-8-5 | 1 | 12 |
| **I. T. I. O.:** | | | |
| Simpson ..... | 10-8-5 | 1 | 21 |
| Tully ..... | 10-8-5 | 1 | 22 |
| **Magnolia:** | | | |
| Fee ..... | 11-8-5 | | off |
| Killing ..... | 14-8-5 | 1 | 20 |
| **Prairie:** | | | |
| Billington ..... | 11-8-5 | 7 | 2,475 |
| Mitchell ..... | 15-8-5 | 1 | 80 |
| **Sinclair:** | | | |
| Bean ..... | 11-8-5 | 2 | 575 |
| Harjo ..... | 11-8-5 | 2 | 466 |
| Total ..... | | 30 | 10,311 |

**Mission Pool**

| | | | |
|---|---|---|---|
| **Amerada:** | | | |
| Rice ..... | 5-8-6 | 2 | 1,060 |
| **Carter:** | | | |
| Fuswa ..... | 18-8-6 | 2 | 465 |
| Melisse ..... | 9-8-6 | 1 | 1,025 |
| Micco ..... | 8-8-6 | 2 | 245 |
| **Darby:** | | | |
| Judy ..... | 1-8-5 | 1 | 105 |
| **Gypsy:** | | | |
| Barkus, N. ..... | 6-8-6 | 7 | 2,320 |
| Barkus, S. ..... | 7-8-6 | 1 | 190 |
| Dosar ..... | 7-8-6 | 4 | 1,000 |
| Hardy ..... | 7-8-6 | 4 | 322 |
| Harjoche ..... | 7-8-6 | 3 | 143 |
| Micco, L. ..... | 8-8-6 | 2 | 32 |
| Micco, S. ..... | 8-8-6 | 1 | 90 |
| Mission ..... | 5&6-8-6 | 5 | 1,687 |
| Mosar ..... | 1-8-5 | 3 | 685 |
| Baby ..... | 6-8-6 | 1 | 13 |
| **Independent:** | | | |
| Lawson ..... | 1-8-5 | 4 | 1,237 |
| **Independent & Kistler:** | | | |
| Payne ..... | 7-8-6 | 2 | 1,465 |
| **Marland:** | | | |
| Maines ..... | 7-8-6 | 2 | 992 |
| **McMahon et al:** | | | |
| Harjo ..... | 7-8-6 | 1 | 855 |
| **Mid-Kansas:** | | | |
| Moore ..... | 7-8-6 | 1 | 80 |
| **Minnehoma:** | | | |
| Neal ..... | 7-8-6 | 2 | 252 |
| **Pine:** | | | |
| Harjo ..... | 6-8-6 | 2 | 445 |
| Micco ..... | 8-8-6 | 1 | 20 |
| **Prairie:** | | | |
| Melton ..... | 6-8-6 | 2 | 1,535 |
| Micco ..... | 5-8-6 | 1 | 10 |
| Townsend ..... | 6-8-6 | 1 | 105 |
| **Prairie & Gypsy:** | | | |
| Owens ..... | 18-8-6 | 1 | 145 |
| **Shaffer:** | | | |
| Weaver ..... | 12-8-5 | 1 | 395 |
| **Shell & Marland:** | | | |
| Herndon ..... | 7-8-6 | 1 | 122 |
| **Shell & Papoose:** | | | |
| Maines ..... | 7-8-6 | 5 | 1,254 |
| **Sinclair:** | | | |
| Hardy ..... | 7-8-6 | 3 | 943 |
| **Sinclair & Lenox:** | | | |
| Judy ..... | 1-8-5 | 1 | 125 |
| **Slick:** | | | |
| Crain ..... | 7-8-6 | 1 | 665 |
| **Tidal:** | | | |
| Nelly ..... | 12-8-5 | 2 | 595 |
| **Twin State:** | | | |
| Hayes ..... | 8-8-6 | 2 | 1,420 |
| Judy ..... | 6-8-6 | 2 | 675 |
| Ripley ..... | 12-8-5 | 1 | 410 |
| Total ..... | | 79 | 23,127 |

**Bowlegs Pool**

| | | | |
|---|---|---|---|
| **Amerada:** | | | |
| Roscoe ..... | 15-8-6 | 7 | 1,047 |
| **Atlantic:** | | | |
| Baker ..... | 10-8-6 | 4 | 375 |
| Fleet ..... | 23-8-6 | 3 | 135 |
| Grayson ..... | 13-8-6 | 4 | 485 |
| Jones, A. ..... | 16-8-6 | 2 | 40 |
| Jones, C. ..... | 9-8-6 | 1 | 75 |
| **Barnsdall:** | | | |
| McNac ..... | 28-8-6 | 1 | 0 |
| Murrow ..... | 11-8-6 | 4 | 300 |
| **Carter:** | | | |
| Bowlegs ..... | 15-8-6 | 4 | 355 |
| Burden ..... | 23-8-6 | 2 | 145 |
| Harjoche ..... | 14-8-6 | 6 | 435 |
| Hilly ..... | 23-8-6 | 3 | 235 |
| Jones ..... | 11-8-6 | 4 | 397 |
| Walker ..... | 15-8-6 | 4 | 305 |
| Wise ..... | 23-8-6 | 11 | 1,392 |
| **Dixie:** | | | |
| Culley ..... | 11-8-6 | 1 | 68 |
| **Empire:** | | | |
| Lacy ..... | 14-8-6 | 6 | 325 |
| Wise ..... | 23-8-6 | 2 | 135 |
| **Gypsy:** | | | |
| Bowlegs ..... | 22-8-6 | 1 | 3 |
| Bradley ..... | 9-8-6 | 1 | 5 |
| Cumsey ..... | 10-8-6 | 4 | 640 |
| Grayson ..... | 13-8-6 | 4 | 420 |
| Harjoche ..... | 10-8-6 | 3 | 210 |
| Jones ..... | 11-8-6 | 1 | 5 |
| Walker ..... | 15-8-6 | 7 | 830 |
| Wise ..... | 23-8-6 | 1 | 165 |
| **I. T. I. O.:** | | | |
| Barnett ..... | 24-8-6 | 2 | 194 |
| Barnett B ..... | 23-8-6 | 1 | 61 |
| Billington ..... | 22-8-6 | 4 | 237 |
| Bowlegs ..... | 22-8-6 | 9 | 1,275 |
| Davis ..... | 13-8-6 | 4 | 76 |
| Fay ..... | 13-8-6 | 9 | 990 |
| Goforth ..... | 15-8-6 | 12 | 1,323 |
| Livingston ..... | 15-8-6 | 10 | 1,329 |
| Lizzie ..... | 13-8-6 | 3 | 328 |
| Walker ..... | 15-8-6 | 8 | 753 |
| Williams ..... | 12-8-6 | 1 | 199 |
| Wilmott ..... | 15-8-6 | 4 | 232 |
| Work ..... | 24-8-6 | 1 | 41 |
| Youngblood ..... | 24-8-6 | 2 | 97 |
| **Magnolia:** | | | |
| Davis ..... | 13-8-6 | 3 | 441 |
| Davis, M. ..... | 13-8-6 | 1 | 150 |
| Hammond ..... | 10-8-6 | 8 | 691 |
| Rhodos ..... | 12-8-6 | 5 | 464 |
| Van Buskirk ..... | 9-8-6 | 4 | 524 |
| **McCulloch:** | | | |
| Bowlegs ..... | 22-8-6 | 1 | 185 |
| **Mid-Continent:** | | | |
| Baker ..... | 10-8-6 | 4 | 350 |
| Smith ..... | 12-8-6 | 6 | 625 |
| **Minnehoma:** | | | |
| Bowlegs ..... | 15-8-6 | 3 | 65 |
| **Prairie:** | | | |
| Gahagan ..... | 23-8-6 | 3 | 345 |
| Harber ..... | 10-8-6 | 8 | 1,700 |
| Jones ..... | 11-8-6 | 4 | 35 |
| Templeton ..... | 12-8-6 | 5 | 2,020 |
| Whitney ..... | 23-8-6 | 4 | 125 |
| **Pure:** | | | |
| Reed ..... | 14-8-6 | 14 | 2,010 |
| Strother D ..... | 11&14-8-6 | 4 | 367 |
| Strother F ..... | 10-8-6 | 7 | 2,027 |
| **Shaffer:** | | | |
| Lacy ..... | 14-8-6 | 3 | 397 |
| **Shell:** | | | |
| Taylor ..... | 16-8-6 | 5 | 54 |
| **Sinclair:** | | | |
| Cumsey ..... | 10-8-6 | 4 | 750 |
| Ellen ..... | 11-8-6 | 6 | 559 |
| Harjo ..... | 14-8-6 | 3 | 537 |
| Jones ..... | 9-8-6 | 7 | 275 |
| Taylor ..... | 10-8-6 | 4 | 618 |
| Taylor, W. ..... | 10-8-6 | 3 | 300 |
| Walker ..... | 22-8-6 | 4 | 847 |
| **Slick:** | | | |
| Jones ..... | 3-8-6 | 1 | 0 |
| **Texas:** | | | |
| Reed ..... | 14-8-6 | 11 | 690 |
| **Tidal:** | | | |
| Grayson ..... | 13-8-6 | 4 | 345 |
| Harjoche ..... | 10-8-6 | 6 | 950 |
| Total ..... | | 307 | 34,108 |

**Earlsboro Pool**

| | | | |
|---|---|---|---|
| **Amerada:** | | | |
| Anderson ..... | 15- 9-5 | 2 | 350 |
| Cowden ..... | 4- 9-5 | 7 | 903 |
| Rogers ..... | 3- 9-5 | 2 | 85 |
| **Atlantic & Gypsy:** | | | |
| Delaware ..... | 13- 9-4 | 1 | 8 |
| **Atlantic & Sinclair:** | | | |
| Foreman ..... | 18- 9-5 | 1 | 105 |
| **Barnsdall:** | | | |
| Brown ..... | 10- 9-5 | 4 | 1,210 |
| Bruner, F. ..... | 2- 9-5 | 2 | 41 |
| Bruner, N. ..... | 10- 9-5 | 3 | 975 |
| Cudjo ..... | 14- 9-5 | 1 | 26 |
| Davis, D. ..... | 11- 9-5 | 3 | 150 |
| Davis, J. ..... | 11- 9-5 | 4 | 1,070 |
| Davis, M. ..... | 11- 9-5 | 2 | 40 |
| Gibson ..... | 9- 9-5 | 7 | 1,210 |
| Hern ..... | 15- 9-5 | 1 | 1 |
| Ingram ..... | 1- 9-5 | 7 | 315 |
| Pack, S. ..... | 10- 9-5 | 4 | 121 |
| Peter ..... | 10- 9-5 | 3 | 56 |
| Sango ..... | 1- 9-5 | 2 | 1,215 |
| Se alka ..... | 15- 9-5 | 1 | 176 |
| Sullivan, H. ..... | 11- 9-5 | 1 | 4 |
| Sull-Harjo ..... | 10- 9-5 | 2 | 16 |
| Wasutke ..... | 12- 9-5 | 3 | 627 |
| **Burke-Greis:** | | | |
| Wisner ..... | 6- 9-6 | 2 | 465 |
| **Burke-Greis & Red Bank:** | | | |
| Mays ..... | 1- 9-5 | 2 | 990 |
| **Carter:** | | | |
| Davis ..... | 13- 9-5 | 3 | 315 |
| James ..... | 6- 9-6 | 3 | 1,165 |
| **Carter et al:** | | | |
| Gilliam ..... | 13- 9-5 | 2 | 1,520 |
| **Cosden, J. S.:** | | | |
| Anderson ..... | 13- 9-5 | 1 | 4,800 |
| **Continental:** | | | |
| Kays ..... | 2- 9-5 | 2 | 42 |
| Spencer ..... | 12- 9-5 | 4 | 653 |
| **Empire:** | | | |
| Barker ..... | 12- 9-5 | 1 | 20 |
| Edmondson ..... | 3- 9-5 | 2 | 80 |
| **Empire & Marland:** | | | |
| Anderson ..... | 13- 9-5 | 1 | 590 |
| **Empire & Amerada:** | | | |
| Bullock ..... | 8- 9-5 | 1 | 382 |
| **Gypsy:** | | | |
| Bruner ..... | 10- 9-5 | 4 | 1,457 |
| Carter, B. ..... | 11- 9-5 | 7 | 2,080 |
| Earl ..... | 16- 9-5 | 1 | 0 |
| Hunick ..... | 5- 9-5 | 2 | 1,582 |
| Noble ..... | 12- 9-5 | 4 | 792 |
| Peter ..... | 10- 9-5 | 1 | 72 |
| Sango ..... | 1- 9-5 | 13 | 1,813 |
| State ..... | 16- 9-5 | 3 | 125 |
| **Independent:** | | | |
| Bruner ..... | 10- 9-5 | 3 | 35 |
| Sullivan ..... | 10- 9-5 | 1 | 12 |
| Knapp ..... | 8- 9-5 | 4 | 1,875 |
| **Independent-Margay:** | | | |
| Gains ..... | 11- 9-5 | 3 | 225 |
| **Magnolia:** | | | |
| Anderson ..... | 18- 9-6 | 1 | 48 |
| Bryant ..... | 9- 9-5 | 6 | 146 |
| Cowden ..... | 4- 9-5 | 2 | 24 |
| Dixon ..... | 12- 9-5 | 1 | 19 |
| Edmondson ..... | 3- 9-5 | 1 | 4 |
| Germany ..... | 30- 9-5 | 1 | 23 |
| Gilliam ..... | 13- 9-5 | 2 | 2,651 |
| Holmsley ..... | 11- 9-5 | 6 | 20 |
| Hyde ..... | 13- 9-5 | 2 | 2,457 |
| Ingram ..... | 10- 9-5 | 1 | 20 |
| Lena ..... | 10- 9-5 | 3 | 56 |
| Moore ..... | 24- 9-5 | 1 | 50 |
| Seay ..... | 12- 9-5 | 9 | 509 |
| Simpson ..... | 10- 9-5 | 4 | 300 |
| Sparks ..... | 11- 9-5 | 6 | 118 |
| Sullivan ..... | 12- 9-5 | 3 | 36 |
| **Mid-Continent:** | | | |
| McCumber ..... | 9- 9-5 | 7 | 45 |
| Rogers ..... | 5- 9-5 | 2 | 150 |
| **Mid-Kansas:** | | | |
| Anderson ..... | 14- 9-5 | 1 | 40 |
| **Phillips:** | | | |
| Dunaway ..... | 14- 9-5 | 1 | 20 |
| **Prairie:** | | | |
| Baker ..... | 24- 9-5 | 3 | 70 |
| Davis ..... | 13- 9-5 | 3 | 730 |
| Graham, C. ..... | 3- 9-5 | 2 | 10 |
| Graham, O. ..... | 10- 9-5 | 4 | 860 |
| Stidham ..... | 11- 9-5 | 9 | 1,560 |
| **Prairie & Whitney:** | | | |
| Harjo ..... | 24- 9-5 | 1 | 0 |
| **Shaffer:** | | | |
| Clark ..... | 1- 9-5 | 3 | 220 |
| McCoy ..... | 36-10-5 | 1 | 5 |
| **Shell:** | | | |
| Bayless ..... | 17- 9-5 | 1 | 14 |
| Hearn ..... | 13- 9-5 | 1 | 117 |
| Spencer ..... | 12- 9-5 | 2 | 1,342 |
| **Sinclair:** | | | |
| Alexander ..... | 36-10-5 | 1 | 3 |
| Foreman ..... | 18- 9-5 | 1 | 3 |
| Hollins ..... | 12- 9-5 | 1 | 3 |
| Sango ..... | 2- 9-5 | 4 | 1,51 |
| **Skelly:** | | | |
| Mays ..... | 1- 9-5 | 4 | 1,49 |
| Shepard ..... | 6- 9-6 | 4 | 1,70 |
| Spencer ..... | 12- 9-5 | 1 | 10 |
| **Skelly & Atlantic:** | | | |
| Cherry ..... | 6- 9-6 | 4 | 49 |
| Lottie ..... | 6- 9-6 | 3 | 1,72 |
| **Slick:** | | | |
| James ..... | 6- 9-6 | 2 | 0 |
| **Slick et al:** | | | |
| Campbell ..... | 6- 9-6 | 5 | 2,92 |
| **Superior:** | | | |
| Ingram ..... | 1- 9-5 | 1 | 84 |
| Walker ..... | 2- 9-5 | 2 | 1,51 |
| **Texas:** | | | |
| Anderson ..... | 2- 9-5 | 8 | 12 |
| Brown ..... | 10- 9-5 | 8 | 1,5 |
| James ..... | 6- 9-6 | 2 | 2 |
| Rogers ..... | 5- 9-5 | 5 | 7 |
| Wilmott ..... | 10- 9-5 | 6 | 8 |
| **Tidal:** | | | |
| Walker ..... | 35-10-5 | 3 | 1,54 |
| Watkins ..... | 9- 9-5 | 7 | 1,87 |
| **Twin States:** | | | |
| Barker ..... | 12- 9-5 | 3 | 5 |
| Fern ..... | 2- 9-5 | 2 | 9 |
| Total ..... | | 300 | 58,0 |

## ROCKY MOUNTAIN AREA

(Continued from Page 53)

30, has rig up. R. D. Compton's No. 1-[illegible] Vandergriff, NE SE, Section 1-17-27, [illegible] shut down at 2,200 feet in brown lime [illegible] and Eaton and others' No. 1 Rich, NW SE, Section 29-17-27, is drilling at 2,01[illegible] feet. The Pecos Valley Gas Co.'s No. [illegible] Vandergriff, NW SE, Section 5-17-28, [illegible] bottomed at 1,329 feet in lime and se[illegible] the 5⅜-inch at 1,319 feet. It is on to[illegible] of the gas horizon. Same company's N[illegible] 4 Vandergriff, NW SE, Section 5-17-2[illegible] is drilling at 835 feet in lime. Leonar[illegible] & Levers' No. 1 Haggerty, NE cor. NW[illegible] Section 18-16-30, is drilling at 2,930 fe[illegible] in dark gray lime.

In Chaves County, L. B. Tannehill[illegible] No. 1 Butler, SE cor., Section 15-12-2[illegible] is bottomed at 850 feet and pulling 6[illegible] inch to ream to bottom. The tools a[illegible] in the hole. The Transcontinental-Cal[illegible] fornia Oil Co.'s No. 1 Robbins, SE co[illegible] Section 1-14-28, is drilling at 1,860 fe[illegible] in anhydrite.

In Curry County, the Frio Oil Co[illegible] No. 2 Saunders, SE NW NW, Sectio[illegible] 11-5n-35, is reported abandoned at 1,30[illegible] feet. In De Baca County, the Transco[illegible] tinental Oil Co.'s No. 1 McWhorter, Se[illegible] tion 6-3s-22, is drilling at 3,600 feet i[illegible] red shale, and the Pittsburg Oil Co.'s N[illegible] 1 McAdoo, SW NE, Section 16-1s-2[illegible] is drilling at 4,317 feet in hard lim[illegible] The latter formerly was known as t[illegible] Navajo Oil Co., the name having be[illegible] changed.

In McKinley County, in the northwes[illegible] ern part of the State, J. W. Halsell[illegible] No. 1 Fairchild, SW SW, Section 4-18[illegible] 10w, in the Seven Lakes district, is r[illegible] ging up, and the San Juan Coal & O[illegible] Co.'s No. 1 Santa Fe, Section 27-18[illegible] is drilling at 625 feet with the 12½-in[illegible] at 60 feet. Fenner & Bailey's No. 1[illegible] NW SW, Section 35-2n-16w, was co[illegible] pleted as a water well at 300 feet.

In San Juan County, the Huntingt[illegible] Park Oil Co.'s No. 1 Goede, SE SE. Se[illegible] tion 29-30-9, which drilled into a sa[illegible] in the Mesa Verde some months ago [illegible] a total depth (corrected) of 4,550 fe[illegible] is bailing to test the show of oil. T[illegible] Blackrock Oil Co.'s No. 2 Swinburne, S[illegible] SW, Section 11-25-13, is preparing to r[illegible] sume after being idle during the win[illegible] at 1,550 feet at which depth the 10-in[illegible] was set. The Milwaukee-New Mexi[illegible] Syndicate's No. 1 Beardsley, C NE. Se[illegible] tion 30-28-11, Kutz Canon district, [illegible] drilling at 1,330 feet, and the Angel Pe[illegible] Oil Co.'s No. 1 Garland, NE NE, Secti[illegible] 11-28-11, is drilling at around 3,000 fe[illegible] It had another show of gas at 2,950 f[illegible] in the upper Mesa Verde. The Childe[illegible] Drilling & Producing Co.'s No. 2. N[illegible] NW, Section 24-31-16, Westwater Dom[illegible] is drilling at 2,008 feet.

In San Miguel County, H. E. Hoover[illegible] No. 1 Sanjuijusla, NE SE, Section [illegible] 17-17, near Las Vegas, is shut down [illegible] 2,081 feet where it had a show of [illegible] followed by a hole full of water. It pro[illegible] ably will be abandoned.

### UTAH

The Continental Oil Co.'s No. 1 Bo[illegible] dary Butte, Section 22-43-22, San Ju[illegible] County, Utah, which is at a very interes[illegible]

# FISHER

## . . . . Vapor Pressure Controllers for Oil Storage Tanks

A tracing of the advancement of producing and refinery processes and equipment would present a chart "high-lighted' with turning points where Fisher products have been used as a basic factor in developing processes to their present high standard of efficiency and economy. *Fisher products are the petroleum engineers' standard—they are considered as a "system", not as pieces of equipment. Fisher's engineering department—technical men with many years of oil field experience—offer you a consulting service of rare value. Why not consult with them—there's no obligation.*

The most recent addition to the wide Fisher line of oil and gas regulating devices is the FISHER VAPOR PRESSURE CONTROLLERS for Oil Storage Tanks (Patents Pending). These devices are built in two styles—Duplex Type No. 878 for use with dry gas return system—Simplex Type No. 870 for system not having dry gas.

**THE FISHER GOVERNOR CO.**
**Marshalltown, Iowa**
**900 Fisher Bldg.**

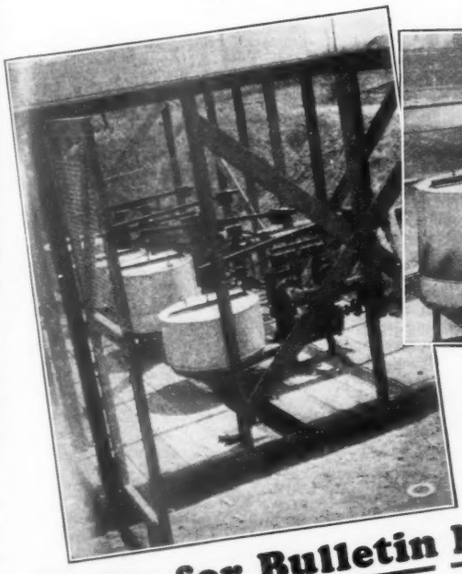
*Distributed by*

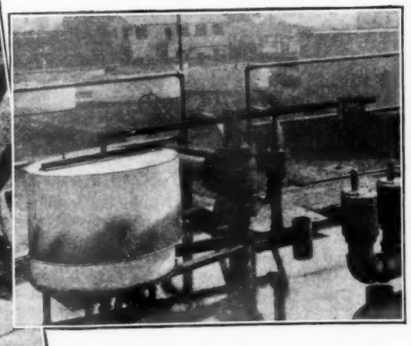
**SMITH SEPARATOR COMPANY**
Tulsa, Okla.

2039 East 38th St., Los Angeles, Calif.

1105 Commerce St., Fort Worth, Texas

16 Louisiana St., Houston, Texas





*Duplex Type No. 878 Installed Directly on Top of an Oil Storage Tank*

*Battery of Type No. 878 Installed on the Ground*

**Write for Bulletin No. 60**

*The Duplex Type of Tank Vapor Controller Type No. 878* is intended for use as a vacuum and pressure controlling device with an oil vapor recovery system. Vapor recovery systems are applied to oil storage tanks containing crude oil, gasoline, and other crude oil products at tank farms, refineries, and natural gasoline plants.

Each system has a network of vacuum lines leading to the different storage tanks for collecting the vapors which have evaporated from the oil in storage. Usually the vapors are delivered to a compressor station for converting back into gasoline or other liquid crude oil products. The saving effected is considerable, because the valuable vapors would otherwise be lost to the atmosphere through the tank relief valves. Such a system also recovers the vapor displaced by oil in filling an empty tank. For a complete system there is also required a series of pipes carrying dry gas under pressure back to the storage tanks. This gas is charged back to the oil storage whenever a slight vacuum occurs in the tanks due to removal of the oil or to atmospheric temperature changes. Such a return system insures the tank being free of air and reduces the fire hazard by preventing the formation of an explosive mixture of vapor and air.

It is for these systems that the Duplex Controller is applied for regulating the outflow of vapor from the tank to the vacuum collecting line whenever the tank is under a slight vapor pressure. When a vacuum condition occurs in the tank the Duplex unit controls the flow of dry gas back to the tank from the gas return lines.

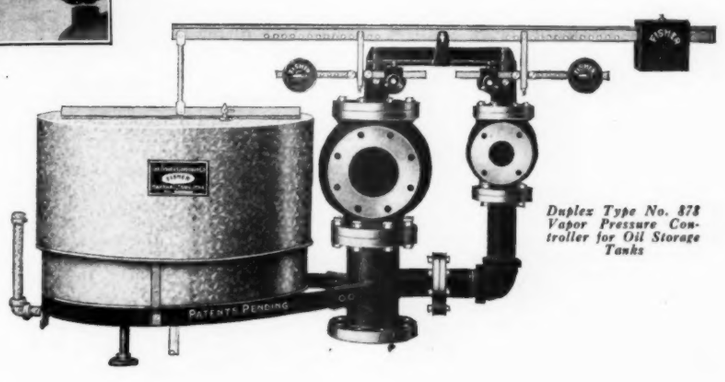
The design of these controllers incorporates reliability and mechanical simplicity in their construction. The prime mover for operating the valves is an air-bell or gasometer, the simplest possible device for converting changes of pressure or vacuum into motion. The gasometer is made large enough to provide ample force for direct operation of the pressure and vacuum valves through a simple arrangement of levers and links. It is sensitive to an astonishingly small change in pressure or vacuum. Diaphragms, dash pots, and pilot valves are eliminated from this construction.

### INSTALLATION

The Duplex Controller may be installed directly on top of the tank roof with the vapor nipple fastened to any suitable flanged opening. Tank pressure is applied to the gasometer through the control pressure pipe.

These units are often installed on the ground and when this is done the vapor space in the tank is connected to the vapor nipple by a suitable pipe line. A separate control pressure pipe applies the tank pressure to the gasometer through the pipe. When located on the ground several units are often grouped together.

*The recommendations of our Engineering Department are always available regarding the service and application of these units.*




*Duplex Type No. 878 Vapor Pressure Controller for Oil Storage Tanks*

ing stage, is drilling at 4,800 feet without any increase in the show of gas which at last reports was approximately 7,000,000 feet a day. It is in the lower Pennsylvanian and approximately the same horizon as the company's No. 17 on the Rattlesnake Dome in New Mexico which is showing for a producer. In Washington County, in the southwestern part of the State, two new operations are getting under way. The Arrowhead Petroleum Co.'s No. 1, SE SW NE, Section 1-43-15, on the Punchbowl structure, 6 miles southeast of St. George, has a standard rig with an 84-foot derrick up. The surfact formation is the Moenkopi, and the first objective is the Coconino-Supia expected at around 1,200 feet. The outfit is capable of drilling to 6,000 to 7,000 feet if necessary. The other is the Royal Oil Development Co.'s No. 1, SW cor. SE, Section 34-41-11, on the Grafton Dome, which commenced spudding on March 10, and is drilling at 130 feet with a Keystone rig. It started in the Moenkopi. The Mid-American Oil Co.'s No. 1, Section 17-43-15, Bloomington Dome, resumed at 1,970 feet and is cleaning out, and the St. George Oil Co.'s No. 1 Hiatt, Section 30-43-14, Beehive Dome, is shut down at 851 feet for casing.

The Price River Petroleum Co.'s No. 1, SW cor. NE, Section 16-14s-10e, Carbon County, is being abandoned at 3,074 feet. It had a small show of gas at 3,050 feet, believed to be carbon dioxide, probably in the Morrison formation. In Box Elder County, the Utah-Pennsylvania Oil Co.'s No. 1, Section 3-10n-4w, Penrose Dome, is drilling at approximately 2,500 feet in brown lime. The 8¼-inch was set at 2,100 feet and the hole was full of water just below the pipe.

In Uintah County, the Western Venture Corp.'s No. 1 Krumvieda, Section 6-5s-21e, drilled out the plug at a total depth of 1,296 feet. When the water had been bailed down to 400 feet off bottom, considerable gas came in and the well was shut down until the 4¾-inch could be run. The same firm's No. 1 Sphar, Section 8-5s-21, Dog Valley structure, is running the 10-inch at 900 feet. The Maude Ellen Oil Co.'s No. 1, Section 28-3s-21, has recovered tools and is drilling at 1,500 feet.

In Grand County, the Navajo Petroleum Co.'s No. 1 State, SW SE, Section 2-20-21, in the Cisco district, ran a liner to shut off cavy ground and after cleaning out scratched a sand at 2,860 feet which showed a little live oil and considerable gas. The well then shut down for orders. This company was organized about a year ago by W. H. H. Cranmer and associates. It probably is in the top of the Dakota. The Crescent Oil Syndicate's No. 1 McCarthy, Section 27-21-19, in the Crescent area, is drilling below 1,602 feet after being shut down for the winter. The Utah Southern Oil Co.'s No. 1 King, Section 13-23-20, Salt Valley Dome, is drilling at 3,100 feet.

The Phillips Petroleum Co.'s No. 1 Shick, Section 16-27-16, in Wayne County, is still bottomed at 4,900 feet and spudding around bit to loosen.

## COLORADO

One completion in Colorado was reported this week this being the Midwest Refining Co.'s No. 7-M Parkinson, NW NW, Section 23-4-92, on the Iles Dome in Moffat County. Drilling was suspended at 3,433 feet in shale 6 feet below the bottom of the Morrison. It swabbed 35 bbls. after standing 24 hours. This well stopped last fall in the upper Morrison and was on production for several months after which it was deepened through the lower Morrison. Probably it will be continued on to the Sundance when the oil is exhausted. It does not prove up any new territory.

The Vineland district southeast of Pueblo where an incipent boom was getting under way has cooled off and is no longer a hot spot in the news. So far no wells have encountered any oil in commercial quantities and only a few of the many operations which were promoted are active. There is a strong probability that the discovery well, the Vineland Oil Co.'s No. 1 Shaw, NW NW, Section 3-22-63, will never be tested. It is about three months since it was reported standing almost full of oil. Litigation tied up operations for a while, but this was settled a few weeks ago when the oil men got the contestants together. It was expected that the well would be completed and tested, but it is in bad shape and it is doubtful if it can be saved. The casing parted when it was being pulled to ream the hole. Then it was reported that lathe shavings were in the hole, but nobody seems to know where they came from or how they got in there or for what purpose. Then the top of the parted string is reported to be mushroomed. The deepest well in the field is the Christy-Frantz Corp.'s No. 1 Vey, SW SW, Section 13-22-63, 2½ miles southeast of the discovery. It topped the Timpas lime at 670 feet and passed out of it at 725 feet. A sand, probably the Dakota, was cut at 1,142-1,252 feet. There was a 7-foot shale break near the center. Above the break it had about 600 feet of water in the hole and below the break it ran into an artesian flow. It went into the top of the Morrison formation at 1,252 feet and barely touched a sand at 1,425 feet. This sand was reported to have shown some rainbows. The 10-inch is 60 feet off bottom and the operation is temporarily shut down. The same firm's No. 1 Mannerich, NW SW, Section 34-21-63, one-fourth of a mile north of the discovery, is shut down at 1,050 feet in shale. It topped the lime at 725 feet. This well was reported last week to have had some water in it. The Security Oil Trust's No. 1 Bush, NW NW, Section 14-22-63, is reported shut down at 615 feet, probably in the top of the Timpas lime. The Dickason-Hench Oil Co.'s No. 1 Stanbeck, SW NW, Section 19-22-62, is shut down at 985 feet. It topped the lime at 635 feet. It was reported to have shown a half bailer of oil on the sump at this depth, but parties watching the bailer a little later say they did not see any rainbows on the water. The Amarillo Production Co.'s No. 1 Pahl, SW NW, Section 35-22-63, is drilling at 335 feet, and G. E. Stevenson's No. 1 Isis, SW NE, Section 1-23-63, is drilling at 800 feet. The Christy-Frantz Corp.'s No. 1 State, SW NW, Section 16-22-63, is drilling, and C. W. Sheffer's No. 1 State-Lubers-Oliver, NW SE, Section 4-22-63, is drilling at 950 feet in shale. The Nordic Oil Syndicate's No. 1 Carr, SW SW, Section 13-22-63, is bottomed at 650 feet and underreaming the 8¼-inch. The Sundance Oil Co.'s No. 1 Oliver-Lubers, SW SE, Section 35-21-63, made little progress after spudding and it is reported that the contract will be given to other parties. Windle Brothers had the contract. The last-named firm has several rigs up in the field but none of these have spudded. The Pueblo Chief Oil Co.'s No. 1 State, NW NE, Section 35-21-63, is spudding. Several wells which were locations, or reported moving in, and one or two which were even reported spudding are now entirely off the list.

### Testing New Territory

The Continental Oil Co.'s No. 1 Fleming, SE NW, Section 6-9-68, on the Wellington Dome in Larimer County, which will test new territory, is spudding, and the same company's No. 3 Mitchell, SE NE, Section 6-9-68, is on top of the sand below 4,300 feet. This well is in the area of a big gasser.

In Moffat County, the Midwest Refining Co.'s No. 24-SD Parkinson, SE NW, Section 22-4-92, Iles Dome, is drilling at 3,080 feet in gray and green sandy shale and bentonite, and the Texas Production Co.'s No. 36 Lloyd, SE SE, Section 21-4-92, is bottomed at 3,620 feet, and waiting for underreamer. The 6¼-inch is at 3,585 feet. Thomas McLaughlin and others' No. 1 Williams, NW SW, Section 2-3-92, is drilling at 3,272 feet and carrying the 8¼-inch at 3,268 feet. The Texas Production Co.'s No. 5 Walter Wick, Section 10-4-91, Moffat Dome, set the 6¼-inch at 4,619 feet. Total depth is 4,646 feet. Same company's No. 11 Knowlton, SE cor., Section 33-5-91, is drilling at 4,542 feet. Its No. 4 Belle Dennis, Section 7-6-86, Tow Creek Dome in Routt County, is bottomed at 4,230 feet.

The Parker Club's No. 1 fee, Section 4-28-68, Huerfano County, is bottomed at 3,002 feet and waiting for casing to make a formation shutoff.

C. E. Shoenfelt, petroleum engineer, formerly with some of the major oil companies, has joined with C. D. Johnson who has maintained a petroleum information bureau in Denver for the past year and the new firm has been incorporated as Petroleum Information, Inc. The firm has offices in the Continental Oil Building in Denver where it conducts an extensive business in scouting, geological, geophysical, mapping and engineering work. The organization practically takes the place of a land and geological department for companies not large enough to maintain an expensive staff of their own and issues regular scout reports in which it receives co-operation from most of the larger concerns.

## WYOMING

A scout report showed only seven wildcat wells (exclusive of proven fields) active in Wyoming, the number idle being 42. This indicates the extent to which winter conditions and other factors contribute to the slowing up of drilling at this season. Conditions are changing rapidly and greater activity will be noted from this time on.

The only completion reported was Martin B. Falk's No. 2, NE Section 9-31-98, in Fremont County, which encountered water at around 2,453 feet and was abandoned. In Park County, the Midwest Refining Co.'s No. 1 Kirk, SE SE, Section 23-58-98, on the Frannie Dome, is drilling at 1,935 feet in hard sandy shale and its No. 36 Rosenberg, SE NW, Section 25-58-98, is drilling at 1,800 feet in soft gray slate. The Cody Petroleum Co. has rig up for a well on the Shoshone structure in Section 16-53-101, on which the Ohio Oil Co. brought in the discovery well last fall. The Lenco Petroleum Co.'s No. 1, Section 20-53-101, on the same dome, is bottomed at 1,945 feet and underreaming the 13⅝-inch at 1,835 feet.

In Carbon County the Producers & Refiners Corp.'s No. 1, NE NE, Section 14-25-89, on the Sherrard Dome, which has been delayed at 3,027 feet by the gas catching fire and burning the rig, has rebuilt the rig and resumed. The gas has been mudded off. In Big Horn County, the Ohio Oil Co. is rigging up for another test on the Byron, or Garland Dome in its No. 1 Easton, Section 33-56-97. In Sweetwater County, the Mountain Fuel Supply Co.'s No. 1 Humphreys, Section 2-12-101, Canon Creek Dome, is drilling at 3,310 feet, and its No. 1 Arnold, NE Section 24-19-104, Baxter Basin district, is drilling at 305 feet. In Lincoln County, the Midwest Refining Co.'s No. 1, Section 35-22-115, Waterfall Dome, is drilling at 2,705 feet in hard brown lime.

## MONTANA

The completion of a 150-bbl. well west of production in the Pondera Field was the most interesting development in northern Montana the past week. The well was drilled by the Kevin Corp. on the NW Section 16-27-4. Gas was encountered at 2,005 feet and oil came into the hole at 2,021 feet, increasing in volume as the bit penetrated the sand. The well made 225 bbls. on a 36-hour test. The Kevin Corp. is starting another well a short distance south.

The Triangle Oil Co. completed a well on Section 10-27-4, in the Pondera Field, and a 1,000-foot stand of oil is reported. The Midwest Refining Co. has lost a second string of tools in No. 21 State and completion will be delayed. The Midwest started a new well this week on Section 9, and the Ohio Oil Co. is drilling below 600 feet on Section 22. Two interesting wells drilling on the west side of the field are the Warren Oil Co.'s No. 1 Jones on Section 17, and the No. 4 Fulton State on the NW Section 16. The former is the most westerly location, and in view of the success of the Kevin Corp. well looks encouraging. The Fulton well is on the same quarter as No. 3 Fulton, which was a good well. The Texas Pacific Coal & Oil Co. is spudding its No. 11 Hirschberg on Section 14-27-4, location for which was made before the shutdown last fall.

The spring drilling campaign is starting in the Kevin-Sunburst Field. The Cosmos Petroleum Co. has two new wells drilling and the Marias River Co. has spudded a new well on the Zachor lease. The Tarrant Syndicate has started a well on the Ward lease and the Craig Drilling Syndicate is drilling its No. 2 Bluhm which is attracting attention as it is the first well to be drilled by electric power. The field has had electric service for a year or more, and many wells are being pumped in this manner.

The Dakota-Montana's No. 22 Emmons on Section 31-35-1, will probably be the next completion in the Kevin-Sunburst Field. The same company is building rig for its No. 23 on the Emmons lease.

### More Wildcatting

Improved weather conditions have encouraged wildcat operators and considerable activity is noted. The Texas Pacific Coal & Oil Co. has resumed drilling on the Mud Creek structure, 35 miles northwest of Great Falls, and at last reports was close to 1,000 feet in depth. Completion is expected at about 1,350 feet. The test is near Power, and the Texas Pacific is said to hold leases on 12,000 acres.

The Signal Hill Oil Co. spudded a test on the hill above Lewistown. This company has asked for a gas franchise from the Lewistown council, and it is hoped a gas production can be developed. In the extreme southeastern corner of the State the Montasota Oil & Development Co. is drilling at about 500 feet, 15 miles northwest of Alzada, where a shallow sand is expected at 800 feet.

In the Sweetgrass Hills in northern Montana, the Western Natural Gas Co. has spudded its new test on Section 5-37-4, and expects to complete the hole to the shallow sand within a month. In the same part of the State, the joint test of the Sunburst Oil & Refining Co. and the Bears Den Oil Co. on the Bears Den structure is only about 150 feet off the first possibly productive sand.

The Ohio Oil Co. is starting a second well on the Dry Creek structure in southern Montana. The Ohio's first well on this structure found a gas flow of about 11,000,000 feet. The gas was very wet and hopes for an oil producer ran high but the hole was lost on account of a fishing job. This well has been tied in to the Elk Basin-Billings gas line and a second hole started a quarter mile east of the discovery well on Section 11-7-21.

### ROCKY MOUNTAIN PRODUCTION
**Daily Average Runs Week Ended April 13**

| | |
|---|---|
| **WYOMING** | |
| Salt Creek | 30,110 |
| Big Muddy | 2,310 |
| Grass Creek | 2,330 |
| Elk Basin | 990 |
| Ferris | 20 |
| Rock Creek | 2,440 |
| Lance Creek | 260 |
| La Barge | 1,740 |
| Poison Spider | 610 |
| Oregon Basin | 2,320 |
| Osage | 630 |
| Lander | 450 |
| Byron | 30 |
| Lost Soldier | 3,310 |
| Simpson Ridge | 60 |
| Dutton Creek | 50 |
| Rex Lake | 120 |
| Hamilton Dome | 620 |
| Total Wyoming | 48,400 |
| **MONTANA** | |
| Cat Creek | 1,420 |
| Kevin-Sunburst | 5,300 |
| Pondera | 2,850 |
| Lake Basin | 80 |
| Total Montana | 9,650 |
| **COLORADO** | |
| Florence | 1,037 |
| Moffat | 1,076 |
| Fort Collins | 2,357 |
| Iles Dome | 1,447 |
| Rangely | 100 |
| Tow Creek | 506 |
| Boulder | 25 |
| Total Colorado | 6,548 |
| **NEW MEXICO** | |
| Rattlesnake | 768 |
| Hogback | 270 |
| Artesia | 898 |
| Cap Rock | 410 |
| Table Mesa | 221 |
| Total New Mexico | 2,567 |
| Total Rocky Mountain | 67,165 |

## C. W. BROWN DIES

SHREVEPORT, La., Apr. 15.—C. W. Brown of Brown Brothers, oil producers, died Wednsday night. Mr. Brown had been in failing health for two years. Brown Brothers were among the pioneers in the developing of the oil fields of Caddo Parish and environs.

## ROCKY MOUNTAIN AREA IS UPSET BY ORDER

(Continued from Page 33)

case. The company had made five discoveries of oil or gas in the 11 wells drilled. The committee ruled that 15 out of the 78 permits were in good standing; that the company and qualified permittees for whom drilling was done are entitled to five leases from the permits upon which discoveries had been made; gave the company 90 days to perfect applications for leases; disapproved its application to continue exploration work under the permits; announced that leases would be granted for only one-fourth of the acreage included in each permit; and declared the lease of the remainder is discretionary and would not be issued until public interest demanded it.

**Interpretation of Decision**

The decision is interpreted to mean in effect that a well drilled for a group of permittees protects only the permit upon which it is located; that a lease of not more than 640 acres can be selected within 90 days around each well which made a discovery and within the permit area and that the preference lease will not be granted at this time; and that 58 of the permits affected have been ordered cancelled. Since this case is to set a precedent, it may be easily imagined the situation created when it is understood that most of the exploration in the Rocky Mountain area is taking place under the group development plan.

The situation which had developed prior to the latest decision already had become very complicated and numerous tangles were resulting. All applications for permits filed prior to March 12 are being or have been returned, some of which were filed two or three years ago but never acted upon, and permits which had been issued are being cancelled in wholesale lots. Operators have been compelled to revise their drilling programs almost daily. They are centering their efforts primarily upon permits upon which drilling must be done to protect them and are holding the cancellations for future consideration.

**New Developments**

New developments are coming with considerable rapidity. The governors of Colorado, Utah and Wyoming met in Denver 10 days ago and drafted a protest to President Hoover. This letter, which outlined in considerable detail the attitude of most of the western people directly concerned, was referred by the President to Secretary Wilbur without comment. The latter referred it to the committee composed of Comissioner Spry of the General Land Office, Director George Otis Smith of the Geological Survey, and Mr. Finney, solicitor of the Department of the Interior. In the meantime applicants for prospecting permits who have had their applications turned down and holders of permits are organizing in the western states. A committee of attorneys representing the oil companies submitted to Secretary Wilbur a series of proposals for interpretation of the new rules to which a reply was given. Senator King, of Utah, will introduce a resolution in Congress when it convenes in April 15 directing the committee on judiciary to investigate and report on the validity the two orders of Secretary Wilbur carrying into effect the new policy.

A memorial resolution introduced into the Colorado General Assembly protesting to the President against the new order, went down in defeat and its failure was credited to politics. The assembly is Republican in complexion and party lines were drawn. Leaders objected to a Republican majority taking a slap at the head of the party at the very beginning of his term. Litigation in the courts is practically certain to result and no one knows at present just what is going to be the outcome of the muddle.

**Letter of Governors**

A meeting was held in Denver on March 30 by Governor W. H. Adams of Colorado, Governor George H. Dern of Utah, and Governor Frank C. Emerson of Wyoming at which the letter to the President was formulated. Governor H. C. Baldridge of Idaho and Governor J. E. Erickson of Montana were unable to be present though it was understood they fully approve of the purpose of the conference. Governor R. C. Dillon of New Mexico declined to attend and wired that "New Mexico is perfectly satisfied with President Hoover's judgment regarding oil conservation." Though the letter itself was conciliatory, some of the operators and permittees who appeared before the governors were rather bitter in their attitude towards the new policy. The letter was as follows:

Denver, Colo.,
March 30, 1929.

Honorable Herbert Hoover,
President of the United States,
Washington, D. C.

Dear Mr. President:

The Governors of the States of Colorado, Utah, and Wyoming assembled in Denver, Colo., on March 30, 1929, for the purpose of discussing the situation created by the announced policies of the President relating to exploration of the public lands for the production of oil. The Governor of Montana wished to attend the conference but was unable to arrange his plans to meet at the time selected. The Governor of New Mexico advised us that he was satisfied with the announced policies of the administration and was not interested in attendance at the conference. These five public land states are those most interested in the oil resources of the Rocky Mountain area.

Following a thorough discussion of the entire subject, the three governors attending the conference now very respectfully, but in great earnestness, urge upon you, as President of the United States, that much good can come through wholehearted co-operation between the several states and the United States, in the formulation of any policies concerning the public lands. We feel that changes of policy, or proposed new policies, vitally affecting the welfare of the individual states, should not be made without conference and consultation with those charged with the duty of protecting and advancing the interests of their people. We have an earnest desire to be helpful and will gladly give our aid to any policy that may be soundly based upon the good of the nation, if the benefits conferred outweigh any detrimental effect upon the states concerned. Upon the other hand, we believe we will be justified in expressing opposition to a policy that would seem to cause material injury to our states without adequately contributing to the solution of a national problem.

In approaching the problem of the conservation of the oil resources of the nation, we have carefully reviewed the facts, and we have come to the definite conclusion that the new policies as applied to the public lands under Order No. 338 of the Secretary of the Interior, will have little or no effect upon the problem of conservation or overproduction but will have a disastrous effect upon the development and progress of the oil producing public land states.

**Reasons for Conclusions**

That the principal reasons for these conclusions upon our part may be presented to you, we are pleased to submit for your consideration the following information which seems to us authentic and pertinent to the subject.

1. There is no overproduction of oil in the Rocky Mountain States.

(a) Ready market in area naturally supplied by these states is found for all production.

(b) Trend in production is downward, and amount of crude oil produced today is only about one-half that of five years ago.

(c) Total production from these states is less than 3 per cent of total production of nation.

(d) Present established refineries in area are running at only about one-half capacity.

(e) Policy of shut-in production followed whenever necessary.

2. There is no waste of oil in the Rocky Mountain States.

(a) Supply no more than sufficient to meet demand.

(b) Salt Creek Field, producing about one-half of total production of area, is an outstanding example of fields efficiently operated under methods providing real conservation. Other fields of area largely follow example.

(c) Discoveries of future, even under most liberal policies, would only very gradually increase amount production, and would probably not compensate rate of depletion of existing fields.

**State Interests Affected**

3. The interest of the Rocky Mountain States will be seriously affected.

(a) Development of petroleum resources is now a major industry of this area, and vigorous enforcement of all features of Order No. 338, will result in a serious decrease in the commerce and industry of the states.

(b) Time and labor of thousands of men, and millions in investments will be seriously depreciated in value by strict enforcement of said order.

(c) Eventual result of enforcement of announced policies will be material reduction in revenues accruing to states for purposes of maintaining schools, building highways, developing reclamation projects, and contributing to other constructive undertakings.

(d) The development of oil in state and privately owned lands will be seriously handicapped, as, without control of government lands which usually surround such lands, operators could seldom afford to take the hazard of prospecting.

(e) The Leasing Act of 1920 recognized a partnership between the states and the United States, and resulted from a compromise of conflicting interests. The states were granted a direct interest in revenues from development, in lieu of taxes that otherwise would have accrued to the states. Refusal to grant any new permits would have the effect of materially reducing revenues accruing to the states under the provisions of the said act, which in itself represented an endeavor to remedy the situation created to the prejudice of the public land states by the withdrawal of certain public lands from entry and development.

**Suggestions Offered**

We are inclined to the belief that the announced policies were formulated as a result of the President's desire to see inaugurated a constructive program for the real conservation of the oil resources of the nation, with the Government taking the lead so far as its direct control extends. To such a general program we readily subscribe. We sincerely believe, however, that certain modifications of the announced policies would produce more favorable results than otherwise would be accomplished, and at the same time the interests of the oil-producing public land states would be better served. The following suggestions come to mind at this time:

1. In lieu of requirement of strict compliance in all cases with terms of permits as to actual development, reasonable consideration be given to a policy of moratoriums for drilling operations when conservation would seem to be effected by such procedure.

2. Recognition of equities that may have been established, both in applications for permits and in existing permits, through expenditures of money and effort in geologizing structures, reconciling conflicting interests, and otherwise providing a situation affording sound basis for development.

3. Consideration of equities of permittees as to preference right to lease remaining area covered by a permit, in addition to the 25 per cent of the area subject to mandatory lease. In many cases permittees have proceeded under feeling of assurance that, after a discovery, they would be able to exercise their option to lease all of area covered by permit.

To the end that you may feel assured of our desire to be helpful, and in order that we may aid in bringing about better mutual understanding of the present situation in regard to the oil problem, we would welcome an opportunity for a frank personal discussion with you of this subject, so vital to state and nation.

Very respectfully yours,
WILLIAM H. ADAMS,
Governor of Colorado.
GEORGE H. DERN,
Governor of Utah.
FRANK C. EMERSON,
Governor of Wyoming.

**Plans Paralyzed**

The rapidity with which the President's policy is being carried out is placing a heavy burden upon those who had planned drilling operations this spring. The land offices in the Rocky Mountain States are handling as many as 100 cases a day. Secretary Wilbur was quoted in Washington dispatches on April 5 as saying that 1,223 permits had been cancelled during the week and holders of 1,250 permits had been called upon to show why they should not be cancelled. The total number of cases acted upon by the departmental committee up to that time was 5,079. Many of these permits cover acreage under co-operative agreements which provide for one well to test a group, some one company being in charge of the drilling. As a result, drilling programs are disarranged.

The Kemmerer (Wyoming) Gazette cites three instances of how the new rules are working. Under a ribbon across the entire front page reading: "Hoover's Edict Does Not Hurt Wyoming? There Is No Pain to Paralysis," says:

"Citation No. 1—Organized California capital had planned 14 different drilling contracts in this region, with $150,000 operating capital. After Hoover's edict this was reduced to three on ground that is 'safe' from the bureaucrats.

"Citation No. 2—A duly organized company had planned drilling two deep test wells in Spring Valley, south of Kemmerer, estimating $75,000 as the expense for each; this project abandoned forthwith; loss of another $150,000.

"Citation No. 3—Another company has a producing well on 640 acres, and had applied for lease, and planned another well this spring to cost $50,000. Abandoned for present. 'One-fourth permit to driller' proviso of Hoover's unsatisfactory."

The Gazette says that every dime of the $350,000 involved in these undertakings was independent capital.

**Heavy Burden on Companies**

The many angles developing out of the situation is putting a heavy burden upon the oil companies. For instance, one company finds that if a decision had to be made at once that it will have to drill 20 wells to take care of permits which had been held under co-operative development plans. An example of how a company may have established equities in land prior to the issuing of a permit is that involving a structure in western Wyoming. The issues which have to be met include not only the group development agreement, but the equity established in an area upon which an application was filed prior to March 12, but which was returned after that date rejecting the permit.

The company was having the structure geologized a year or two ago and found that part of it was covered with prospecting permits held by individuals and that also there was some open land. The structure is upon what was unsurveyed land and applicants designated the area applied for by metes and bounds. In such instances the applicant requests the Government to make the proper surveys before the permit is issued. The permit holders were brought into an agreement for group development and a well was spotted. Application for a permit on the open land was made and last summer the Government was requested to make the necessary surveys. The land thus filed upon offsets the location for the test well. Under the procedure established by the department under three administrations there was no reason to doubt but that a permit would issue in due course of time upon the adjoining acreage. The company, with the full approval of the department, proceeded to drill. It was necessary to expend $25,000 to build a road to the location and $50,000 already was in the well when the order of March 12 was issued. Under

the new rules the permit for which application was made has been rejected. The company feels that it has established an equity in the land covered by the application, though the Secretary holds otherwise, and that it was not due to any lack of diligence on its part that the permit was not issued. It will not surrender this equity without a fight, according to an official. The structure in question comprises a sedimentary mountain in a very rough country and to comply with the new rulings the company will have to drill eight wells at a heavy expense on an unproven structure to hold the acreage upon which permits have been issued and which are under the co-operative agreement. If it does not accept this hazard, the chances are that it will have to pull out and take a loss unless the policy of the Department of the Interior is reversed.

**Equities Destroyed**

Another instance of how equities are being destroyed is that of an application for a permit several months prior to March 12. The department had machinery by which it chose one of a number of applicants by a drawing when a tract upon which a permit had expired was again open for filing. This party put his application into the drawing. Attached to it was a card giving the number, etc., with the statement upon it that if it drew the lucky number the permit "shall be allowed." The status of the applicant to a preferential right to a permit was thus established by machinery set up by the Government. An operator, having no reason to question the good will and sincerity of the Government, purchased the applicant's rights for $10,000 and the land came under development. The permit had not been issued prior to March 12, but subsequent to that date the application was returned and the permit denied.

**Gas Lines Affected**

The situation growing out of plans which have been under way for the past two years to produce natural gas for markets recently established also is causing some concern. Permittees on several structures had made co-operative agreements with several companies. The gas comes from fields that are not considered likely to produce oil and cannot, therefore, have any bearing on oil conservation. The gas line project has progressed considerably and large sums already have been expended. One of the necessary undertakings in a major enterprise of this kind is to assure a future gas reserve. The plans were even worked out for unit development of the different fields under one management with governmental approval. The attitude of the Department of the Interior concerning these holdings will be awaited with considerable concern.

Similar instances showing how the new policy is working out might be multiplied manyfold. A company, for instance, was developing an area under eight permits in a group development in Lea County, New Mexico, and had drilled a well. When the time came for seeking an extension of the permits, the Government said that some of the permits were too far away from the test. The company agreed to and did drill another well as requested by the department and brought in a gasser. Again, the department felt that another well should be drilled in order to make a proper showing for the permits farthest away. Again the company agreed and the third well was started. In each instance the company had done just exactly what the Government had requested it to do, but in spite of that fact it stands to lose the equities already established should the Government persist in its new policy. The instance merely illustrates one of the problems facing the operators.

Applications for permits which are being returned are accompanied with the filing fees. Applicants are being urged not to cash the Government's check and to appeal their cases. Permittees and applicants are organizing in several western states and it is expected these will amalgamate into a central organization with headquarters in Denver. H. J. Boise, of Rock Springs, Wyo., is directing the work of organizing in southwestern Wyoming.

A committee representing certain oil companies, composed of Peter Q. Nyce, Robert D. Hawley, P. C. Spencer, Merle N. Poe and D. A. Richardson, on March 29 submitted a report to Secretary Wilbur covering some suggestions as to the manner in which the new policy should be administered so as to protect existing equities. While the Secretary's attitude is shown in the replies that were made, the position of the department is more strongly marked in the decision in the Texas Production Co.'s case.

The committee's suggestions and the answers were published in The Oil and Gas Journal last week.

## WILBUR EXPLAINS POLICY ON PERMITS

(Continued from Page 33)

plans were completed prior to January 1, 1929. The results obtained up to that time were sufficient to inform the department of the conditions in the area embraced in the permits, and no warrant was found for continuing the program as to the large area sought by The Texas Company's present application to continue exploration under the group development program.

"Secretary Wilbur's conclusion was that the Texas Company, and the qualified permittees for whom drilling was done, are entitled to five leases from permits on which discoveries of oil and gas have been made. They are allowed 90 days from date within which to perfect their applications.

"The secretary also found that 15 permits were in good standing, either because the statutory time for drilling had not elapsed, or equities occasioned by drilling or mining operations on the land justified extension. These 15 permits are continued in full force and effect, subject to future compliance with the law.

"The remaining 58 permits on which no discoveries have been made, or actual development work performed, and against which the statutory time for beginning work has run, are directed to be cancelled.

"Under the present policy, leases would only be granted for one quarter of the area included in each permit, which is the amount mandatorily required by the leasing act upon discovery. Lease of the remainder is discretionary and will not issue upon the application of the permittee unless and until such action is required in the public interest. When it is determined to lease the remaining areas, the permittee in each case will be entitled to a preference right to a lease under Section 14 of the leasing act, at such royalties and under such conditions as may be prescribed by the secretary under the law and regulations."

**Kettleman Hills Curtailment**

Secretary Wilbur advised the four oil companies operating in the Kettleman Hills oil field in California to voluntarily combine their drilling activities so as to conserve oil and gas in the ground. These companies are the General Petroleum Co. of California of Los Angeles, Milham Exploration Co. of Los Angeles, Standard Oil Co. of California and the Marland Oil Co. of California.

The companies were informed that it is within the power of the secretary to work out voluntary adjustments in the case of a single pool such as Kettleman Hills. The secretary thinks it would be a calamity to have it developed now that the market is glutted with oil.

George Otis Smith, director of the Geological Survey, will leave here Tuesday for visits with the governors of Texas, Oklahoma, California, Wyoming, Utah and Colorado to present the Interior Department's plan for oil conservation by an interstate compact.

## OKLAHOMA P. L. STATEMENT

Receipts of the Oklahoma Pipe Line Co. during March totaled 3,043,998.09 bbls., a daily average of 98,193.49 bbls. and its deliveries totaled 3,132,386.82 bbls., a daily average of 101,044.74 bbls. Stocks of the company on April 1 were 3,263,857.98 bbls.

## GEOLOGIST'S TOUR OF PERSIAN OIL FIELDS

(Continued from Page 34)

ten), though but a wreck of its one-time sublimity, is historic enough to warrant a day's stay, and Mr. Sherk and I became greatly impressed with its antique grandeur. Here I was invited to lunch by Mr. Thompson, the college president. Continuing south, the villages of Dehbid (altitude approximately 7,500 feet and one of the coldest inhabited places in Persia) and Sivand (where I traded for Kashkai rugs) in turn furnished night's lodging, and on Monday, March 26, we entered Shiraz.

On this route no place has regular European-style hotels except Isfahan, and, considering my large party, I did not think best to patronize that one. My trusty Persian secretaries, with wide acquaintance and ingratiating manners, were adept at securing invitations to dine with officials and in inducing local Armenian families to turn some of their rooms over to the American expert (the Musselmans are generally too reserved to do this). Many were the dinner invitations which it was necessary to decline during my Persian wanderings, for my cook's tasty meals were preferable to the unfamiliar native food. Like hotels, tents were not needed on this journey and caravanserais were spurned, for I was favored in being permitted to stop in the clean rest rooms of the Indo-European Telegraph Co., having a permit from a leading official.

**Hunting by Automobile**

Hunting now became a daily distraction, for I had brought along two favorite rifles and two shotguns. Amir Shah had already proved himself one of Persia's successful sportsmen, and thus my larder was liberally supplied with partridges, ducks, pheasants and gazelle. Perhaps I gained an early reputation myself by bagging a fine gazelle on my first day in the Persian hills while strolling over an anticline with a rifle instead of a geological hammer; but the Persians generally hunt gazelles differently—by running them down with an automobile.

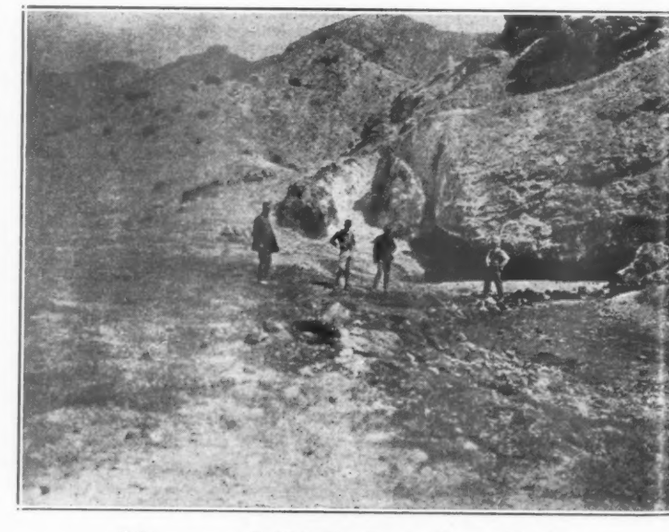
One of my decade-old ambitions was to be realized at last. I had a chance to view Persepolis—that magnificent capital of Darius and Xerxes which was destroyed by Alexander the Great 2,258 years ago. Many fascinating antiquities had already been seen, including the remains of the wonderful palace of Khosru at Kasr-i-Shirin, the ruins of Rhages (Rei or Rhey), 5 miles south of Tehran, old mounds scattered far and wide through Persia, the Tomb of Cyrus the Great and neighboring remains of Pasargadae and Stakhra.

Persepolis is the most impressive among these as regards the imagination into which it leads one as to the splendor, pomp and power of ancient Persia. One marvels at the vast platform (Takht-i-Jamshid, a quarter of a mile in length, the grand staircase, Portals and Palace of Xerxes, magnificent sculptors, Palace of Darius, Hall of One Hundred Columns, the fine engineering work of that time and enormous rock-hewn tombs in the limestone hills behind. Among the numerous ruins that I have seen in the East, this composite alone is not disappointing in its recollection. Sitting on one of the fallen columns one might easily dream nonsense, like a servant who remarked "Those ancient Persians had automobiles, flying machines and bathtubs" (he had mistaken the chariot wheels for automobiles, the wings of the sculptured figures for aeroplanes and the now tenantless sarcophagus of an Archaemenian king for a bathtub).

**Joyland of Photographer**

The ruins of Persepolis and the tombs of the kings constitute a joyland for the photographer, and consequently the two cinema cameras brought with me (as well as several kodaks in the party) came in for intensive use. The exposure of thousands of feet of motion picture film had become an essential adjunct of my engineering activities and I did not regret interrupting the routine to stop at the historic spots on this southern trip and to film impressive archaeological remains. The numerous types of bazaar, caravanserais, street scenes, veiled women, camel and donkey caravans, sheiks and mullas, well-known personages, etc., had long since been exhausted as unfilmed subjects.

Although Persepolis had been left behind with regret, I was still more sorry in Shiraz the next day, to part with Mr. Sherk, who had formed such a congenial companion but who was obliged to return north before starting home. After two nights spent in a really good Persian-style "hotel" (which is merely a place where one is permitted to spread his bed and partake of refreshments



*Oil seepage at Daliki, 40 miles northeast of Bushire.*

he can find any) I turned west toward Bushire.

**Oil Bearing Belt**

For 40 miles west from Shiraz the changes in road and climate were only relative. I was again in the belt of Tertiary beds which are folded, faulted and overthrust to an instructive extent and was entering the presumed oil bearing belt of west and southwest Persia. The route was still through high valleys between ranges rising thousands of feet higher still, on which the structure sometimes stands out as plainly as in a draftsman's cross section. Up one of these valleys the road led to a high divide at about 7,500 feet altitude having tracts of forest on the otherwise barren mountains. At the same time a sublime view opened to the west, as the highway dropped nearly 3,000 feet in elevation in about 3 miles horizontally to the valley of the Tang-i-Chikan descending by one of the crookedest and most dangerous series of hairpin bends in the world

Sometimes as many as a dozen parallel roads of this series could be seen one above the other, and on many of the bends it was necessary to back the cars in order to turn them. In every case some occupant of the car was obliged to jump out and hastily shove a certain pyramidal block under the wheels to prevent backing over the edge of the cliff, which would have caused the car to drop many hundreds of feet vertically.

After crossing the ensuing valley for a few miles and ascending a slight hill another "ladder" was as carefully descended through an elevation of about 2,000 feet; and, when the day was far spent, still another "ladder" was descended. I was now in a hot country of date palms and ripening wheat. On the second day from Shiraz the noon lunch was eaten at Daliki, after which the first oil seepage seen in South Persia was inspected, as it emerges together with warm sulphuretted water from the base of a high limestone hill. At this place an unsuccessful boring was once sunk to a reported depth of 800 feet.

As in other parts of the oil belt, the strata in Fars Province between Shiraz and Bushire are largely of Tertiary age and their structure is in place quite complicated, although to a casual observer the anticlines and synclines might appear to be normal. Here the "gach" of gypsum deposits of the Middle Fars series are predominant, and I can say from many experiences that gach makes as bad roads as any in the world. The road topography in this province, and especially between the "ladders" and Daliki, was a reminder of the similarly rough loess roads of Shensi Province, China.

Bushire was finally reached, on the evening of March 29, being 767 miles from Tehran by my speedometer or 743 miles by the official records of the roads administration. Having reached the shores of the Persian Gulf, my days of vacationing among the antiquities of past civilizations or peaceful dozing as the car sped across the high plateaus were over. A journey northward over the coastal plain and foothills was to be undertaken on behalf of the Persian government in preparation for reports and later detailed investigations on various petroleum matters.

## EASTERN FIELDS

(Continued from Page 59)

L. Fluharty farm to a total depth of 3,403 feet. It is dry in the lower sands and will be filled up to the Fourth sand where a fair gas pressure was encountered.

On Six Mile Run, Union district, Wood County, the Valley Mills Oil & Gas Co. has moved a drilling machine to a location on the W. E. Sugden farm. In Grant district, Ritchie County, Robert Elder and others are rigging up on the M. A. Starkey farm. In Murphy district, Park Bowser is due in the Maxon sand on the W. H. Baker farm. In Grant district, the Hudson Oil Co. has made a location on the George Crumset farm. In the same district, the Vienna Oil Co. has a rig up on the Daniel Wilson farm.

**Cabell County**

In McComas district, Cabell County, the Hamilton Gas Co. is rigging up on the Robert E. Childers farm. In the same district, R. G. McKorkle has rig material on the Day Cook farm. In Grant district, the Harshbarger Oil & Gas Co. has started to drill on the G. A. Rogers farm. In Jefferson district, Lincoln County, the Russell Gas Co. has started to drill on the Whitelaw Elkins farm. In McKim district, Pleasants County, Hastings & Co. have a rig up on the Solomon Robinson farm.

In Clark district, Harrison County, the Clarksburg Light & Heat Co. has a rig up on the A. B. Stout farm. The same company has rig completed for No. 260 and location made for 261 on the Alice J. Reynolds farm. In Grant district, Doddridge County, Travis & Co. have started to drill on the John Adams farm.

In Salsbury Township, Meigs County, J. G. Carnahan and others have started to drill a second test on the Roy Lunsbury farm. In Ames Township, Athens County, the Ohio Fuel Supply Co. is drilling a test on the L. Smith farm. In Elk Township, Noble County, C. A. Stephens & Co. are drilling on the F. Rohrer farm. In Jefferson Township, Otto Poling and others are drilling on the L. L. Feldner farm. In Monroe Township, Knox County, the Upham Gas Co. is drilling on the William Durbon farm.

**SOUTHWEST PENNSYLVANIA**

In Gilmore Township, Green County, the Natural Gas Co. of West Virginia has a Gordon sand gasser on the J. Johnson farm. In Richill Township, the Manufacturers Light & Heat Co. has drilled deeper No. 4 on the Albert Owens farm. It is a duster.

In East Finley Township, Washington County, the Natural Gas Co. of West Virginia has completed in the 30-foot sand a gasser on the J. M. Plants farm. The location is 3,000 feet west of the test on the R. L. McCarrell farm. In Morris Township, the Manufacturers Light & Heat Co.'s No. 5 on the Day farm is holding up at 180 bbls. a day.

## KENTUCKY-TENNESSEE

(Continued from Page 59)

part of the Ambrose-Weller Pool, is reported good for about 10 bbls.

The Globe Oil Co.'s No. 1 on the Gossett 30-foot lane between the Gossett and Hamilton farms, also in the eastern part of the Ambrose-Weller Pool, is reported at close around 10 bbls. initial. This small production between these two big farms of Gossett and Hamilton, indicates that the one-time area of large producers is being drained to a large extent of its oil.

**Daviess County Wells**

The best completion from the Daviess County area for the week was the Trognite Oil & Gas Co.'s, better known as Evans and Garrison, No. 3 on H. B. Trodgen 85 acres, in the Red Hill district, and reported showing for 100 bbls. initial production.

Raydure, Battan and others' No. 2 on the Herb Salmon farm, in the Red Hill area, is reported around 40 bbls. initial.

L. C. Young and others' test on the J. D. Ray farm, near Dermot, about 5 miles southeast of Owensboro, came in a dry hole.

Wade, Moore and others' test on the J. E. Boreman farm, is reported a dry hole. This is in the Jones Pool area southwest of Whitesville.

McMahan and Coomes also found a duster on the Sophia Stinnett 87 acres, about 2 miles southeast of Whitesville.

In the northwestern part of Allen County, in the Gainesville area, I. J. Yapp and others' second well on the M. E. Hood is reported good for about 1 bbl. a day at around 250 feet in depth.

The Wentworth Oil Co.'s test on the John Burdette, in the Pellville Field of Hancock County, found an excellent gas volume in the Jackson sand and will probably complete it for a gas producer instead of going deeper in quest for oil.

Total runs made by wells served by the Illinois Pipe Line Co. in western Kentucky during March was 192,270.84 bbls.

**Other Operations**

The Union Oil Co. is starting a well on the Crow farm, near Oklahoma, southeast of Whitesville, in Daviess County. Ellis, White and others are starting No. 3 on the Tater Howard farm, south of Oklahoma, same county.

The Ohio Oil Co. is drilling No. 5 on the G. A. Weller farm, also in Daviess County.

White Plains Oil & Gas Co., or Snowden-McSweeney Co., is starting No. 3 on the Duke farm, of 105 acres, just south of the Ellis Bartlett 54 acres, southwest of Taffy and in the Bartlett Pool. Two small wells were drilled some time ago on this lease but they were on the opposite side from the big producers on the Bartlett farm, and the new well is close to the producers. This is in Ohio County. In the same pool C. E. Daugherty has spudded in on a well on the north part of the Trodgen lease, same pool.

A rapid drilling record was made on the Trodgen lease in the Bartlett Pool,


It's safe—with an

**Emergency Pipe Clamp**

—the quick, sturdy repair for splits and rust holes in oil and gas lines. Absolutely permanent under any conditions. The established clamp for field use.

Made of malleable iron, in all sizes—1″ to 12″. Carried in stock by practically every Supply Store.

*Write for our new booklet!*

SKINNER BAND CLAMP

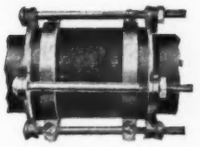
EMERGENCY PIPE CLAMP

SKINNER SERVICE SADDLE

SKINNER PIPE LINE CLAMP

SKINNER PIPE JOINT CLAMP

SKINNER H. P. SADDLE CLAMP



SKINNER COLLAR LEAK CLAMP

**M. B. SKINNER CO.**

**SAMPLE STREET AT FALCON ST.**

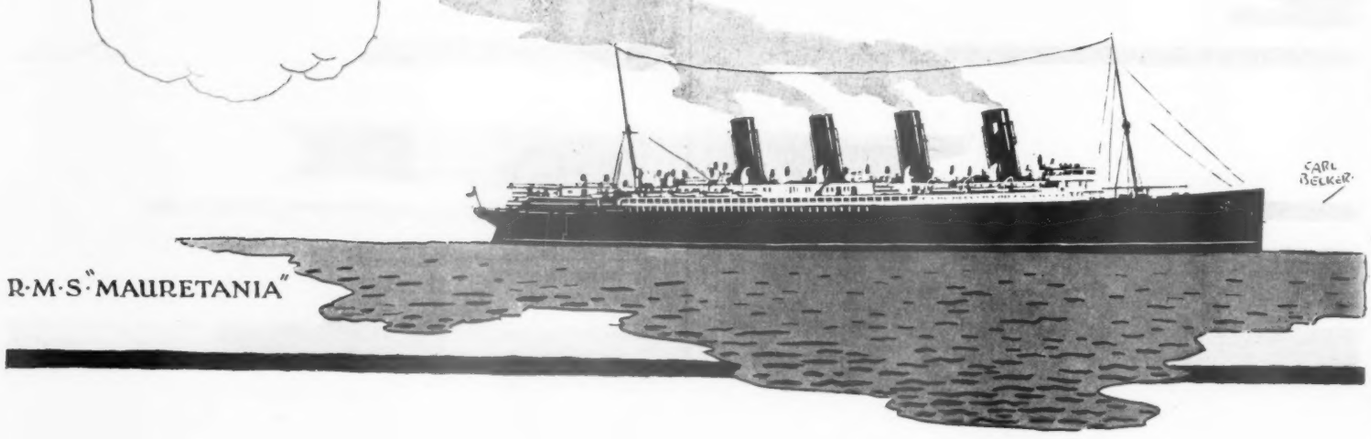
**SOUTH BEND, INDIANA**

# A Monument to the Value of Dependable Protection

Twenty-one years ago, on the River Tyne, there was launched a vessel which stands today a monument to the builder's skill and to the value of dependable protective coatings.

This remarkable ship—the "Mauretania"—has not deteriorated with age but progresses serenely from one new conquest to another. Recently, for instance, after more than 20 years of service, she not only created a speed record by traveling 663 miles in one day, but crossed the Atlantic in the amazing time of 5 days, 3 hours and 17 minutes.

The R.M.S. "Mauretania" is one of more than 15,000 merchant and naval vessels which have protected their inaccessible surfaces with ***Bitumastic Enamel.*** The *original coating* of ***Bitumastic Enamel*** has kept the bilges, coal bunkers and all other internal surfaces of this great ship free from corrosion for more than 21 years.



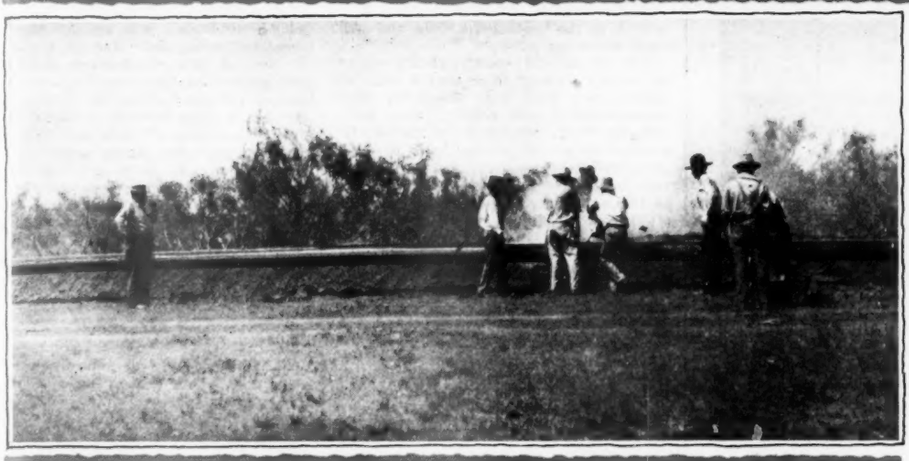

R·M·S "MAURETANIA"

***Bitumastic Enamel*** prolongs the life of every metal surface—on a ship, on a pipe line, underground or under water. And it proves of *greatest* value where corrosion is most severe. In the bilges of a ship, for instance, no other form of coating can stand up for so long a period of time and on pipe lines, buried in corrosive soil, ***Bitumastic Enamel*** has long outlasted any other type of coating ever used. "There is no substitute for experience."

***Bitumastic*** gives you PROOF dating back for more than forty years.

**WAILES DOVE-HERMISTON CORPOR**

**Philadelphia** **Cleveland** **Philtower** **Chi**



**The Atlantic Line**

*A 500-mile 10" oil line laid by the Atlantic Pipe Line Company between Midland, Texas, and the Company's refinery at Port Arthur. Protected for the entire distance by* ***Bitumastic Enamel.***

# PROOF

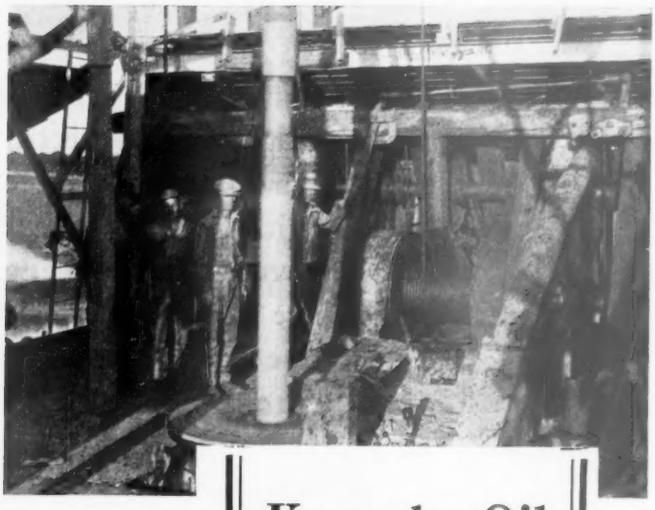
## PROVEN PROTECTION FOR PIPE LINES

That ***Bitumastic Enamel*** has been chosen to protect the world's largest gas and oil lines would, in itself, provide no proof were it not that engineers have based their choice upon the *past performance* of ***Bitumastic***—not only in pipe line but in many other engineering fields.

With projects which involve so large an investment, they cannot risk an unknown coating or an untried method of application. ***Bitumastic Enamel*** is a known quantity—a coating which has more than forty years of record and which, as all experience definitely *proves*, has no equal for the positive long-lived protection of a pipe line. Our book—"The Protection of Pipe Lines"—summarizes this experience. We will be glad to mail you a copy.

**BITUMASTIC**
Reg. U. S. Pat. Off.
**ENAMEL**

**ATION—17 Battery Place, New York**
**Bldg., Tulsa**
**cago** **Houston** **San Francisco**



# Keep the Oil Where It Belongs

. . . in the pipes! . . . with Permanite, the original highly-compressed asbestos sheet packing.

Permanite resists heat and high pressures to an unusual degree — a marked advantage in oil lines. It does not shred, it does not get soft or sticky, it does not blow out. It *does* stand up under long, steady use and keeps joints tight.

Use it on air, steam and water lines as well—or for any liquids difficult to handle. And in pumps, compressors, boilers—wherever there are joints that require a sheet packing that holds and lasts.

[ Permanite has the backing of the same world-wide organization that manufactures Ferodo Friction Linings. Both are acknowledged to be the world's standards. ]

FERODO AND ASBESTOS
*Incorporated*
New Brunswick, New Jersey

K-4-18-29

PERMANITE

Trade Mark Registered U. S. Patent Office

Ohio County, when Hupp and Duff drilled to a total depth of 615 feet in 78 hours.

Marion French, of Mount Sterling, Ky., is back in the Owensboro Field and will start operating at once.

Records in the county clerk's office in Daviess County show that a total of 8,500 leases have been taken on land under which it was believed there were deposits of oil. The lease on the W. G. Hayden farm, on whose land the big producer was brought in at Andersonville, in the Red Hill section, and brought to Davies County the big rush, was one of the early oil leases. Mr. Hayden, who now owns and is having operated one of the outstanding leases in the field, carried leases on thousands of acres in the southern end of the county for 20 years. Each day at present there are several leases filed, and frequently large bunches of acreage are lodged for record by some company or individual, for wildcatting. Operators believe there is oil to be found at low depths, but the expense of drilling thus far has held up projects that may later result in big oil development.

The Ohio Oil Co. is starting a second test on the George McManama farm, about 4 miles north of Calhoun in McLean County. The initial venture on this lease is a fair producer under pump.

**Pipe Line Deliveries**

Report of the State Tax Commission of Kentucky shows that during February the Illinois Pipe Line Co. delivered to the Ohio Oil Co. a total of 72,233.17 bbls. of oil, valued at $110,516.77. Of this amount the county received $552.63. The Producers Pipe Line Co. gathered 14,995.25 bbls. valued at $22,942.73 on which Daviess County gets $114.70. All of the oil brought $1.53 a barrel. With this additional tax money some of the bad highways should be improved so that the oil men can get into the country without going through a sea of mud and water.

The Armistead Oil Co. is starting a well on the H. C. Metcalf farm, in the Friendship Church area of Ohio County.

The Eastern Gulf Oil Co. instead of plugging its No. 6 on the Morgan Ruby farm, in the Red Hill section of Daviess County, in the Jett sand, concluded to test the Barlow formation in hope of finding a pay there.

Wood Oil Co., Inc. is drilling No. 9 R. A. Duke farm, of 200 acres, in the Sunnydale area of Ohio County. Sunnydale Oil Co. is drilling No. 1 on the V. R. Ferguson 47 acres, same area.

## STEEL PRODUCTION UP; LARGE GAIN IN MARCH

By B. E. V. Luty

PITTSBURGH, Pa., Apr. 15.—The steel industry is outdoing itself in the matter of production and yet there is no sign of overproduction for shipping requirements continue heavy. To sum up, January production of steel ingots was slightly above the December rate and the rate for the whole of 1928, which were substantially the same. Then February brought a large gain and the official report for March, just issued, shows a further large gain while the prospects are that this month will have about the same rate as March and may even show a little gain.

The March rate of production was 12.8 per cent above the highest rate in 1928, which was shown for October, while April had been just a shade under October. Production in the first three months of the year was 11.9 per cent above that in the same period of last year, although that was record high for such a part of the year, by a small margin.

About two-thirds of the gain over last year is due to heavier requirements of the automobile industry. Moderately close estimates can be made that the automobile industry absorbed about 16 per cent of the steel made in the first quarter of last year and between 21 and 22 per cent in the first quarter of this year. In a rough way it may be guessed that the agricultural implement industry accounted for the remainder of this year's increase, which leaves it that all other steel consumption has run about the same this year as last, and that of course is doing very well. Consumption in the oil fields is off from a year ago, but there is more steel going into line pipe, chiefly for natural gas. Fabricated structural steel production has run fully one-third heavier. While freight car buying has been heavy since January 1, this did not affect steel production to any material extent in the first three months as it takes time to get the orders into execution and deliveries are well spread out. About 45,000 freight cars have been bought since January 1.

The official report of steel ingot production in March computes the rate at 103.02 per cent of capacity, but the capacity rating is that of December 31, 1927, and present capacity may be guessed at about 3 per cent greater. A fresh capacity rating, for December 31, 1928, will probably be issued within a few weeks. Thus it may be taken that March production was practically at capacity, which means that open-hearth steel making departments ran above their ratings, with favorable weather and hard driving, as there was no little slackness in operation of Bessemer departments.

While the automobile industry has continued to place orders very freely this does not prove that there will be no recession in automobile production in the near future. When the bar, sheet and strip mills are far behind in deliveries as they have been lately with four to six weeks of actual shipping orders piled up, automobile and parts makers naturally buy ahead, to be on the safe side. Later they can postpone some of the deliveries, for of course they never hesitate to do that when circumstances require. Shipments of automobiles to dealers have far outrun dealers' sales, but the automobile makers do not themselves overproduce, never accumulating any stocks of their own. Some sheet makers state that decreased automobile sheet demand would not bother them at all, as consumption of sheets in some other lines is increasing, particularly in sheet products for building and in freight car manufacture.

The long mentioned natural gas line from the Monroe Field, Louisiana, to St. Louis, has now been placed, involving about 115,000 tons of line pipe. The 22-inch was distributed 325 miles to the A. O. Smith Corp., Milwaukee, 204 miles to the National Tube Co. and 25 miles to Spang, Chalfant & Co., while National Tube Co. will also furnish 25 miles of 16-inch feeder pipe, to run from Richland, La., to Monroe, La. Another order reported, but without details, is for 200 miles of 10-inch, for an oil line in the Southwest. There remains the natural gas line from Monroe to Birmingham, Chattanooga and Atlanta, which is expected to come to a head some time.

## MRS. JOHN O'BRIEN DEAD

LIMA, Ohio, Apr. 16.—Mrs. Louise Newell O'Brien, widow of John O'Brien, for years at the head of the Prairie Oil & Gas Co. and who died suddenly in Nowata, Okla. some years ago, died in Stritas hospital in this city after a four months' illness. Mrs. O'Brien was a niece of the late Daniel O'Day, noted pipe line executive, and her father, Patrick Newell, was division superintendent of the National Transit Co. up to the time of his death.

## ELECTRICIANS WILL MEET

The Petroleum Industry Electrical Association will hold its annual meeting in Tulsa April 15, 16 and 17. The organization was formed in March, 1928, at a meeting held in Fort Worth, Tex. The membership is composed of superintendents of electrical power, telegraph and telephone of oil, gas and pipe line companies and the object of the association is educational and fraternal, for better service in the branch of the oil industry represented by the membership. T. J. McMahon, of The Texas Company, Wichita Falls, Tex., is president and H. E. Brown of the Prairie Pipe Line Co., Independence, Kans., is secretary.

## CALIFORNIA FIELDS

(Continued from Page 56)

but this well subsequently cleaned up to some extent and it is being listed for completion doing 280 bbls. daily from 3,844 feet. The city trustees of Huntington Beach enacted a drastic city ordinance recently regulating the construction of wooden derricks. The new ordinance, which resulted from the demolition of several wooden derricks in the town lot area during a recent severe windstorm, affects existing structures as well as any new derricks which might be erected in the future. The new statute is in the form of a rig guying ordinance which requires operators to reinforce wooden derricks by using a one-fourth inch cable which shall extend from a point not more than 20 feet from the top of the derrick and be anchored not less than 65 feet from the corners of the rig's base. A strict enforcement of this ordinance might result in considerable difficulty for operators drilling on a 50-foot lot but this situation will probably take care of itself as several operators have already found it mutually advantageous to diregard property lines in the anchoring of these gpy wires.

**Midway-Sunset**

The Signal Oil & Gas Co.'s No. 2 Sheehan, a recent completion in the Midway-Sunset Field of Kern County doing 1,175 bbls. daily from 3,242 feet, has proven a powerful stimulant and the entire area around this new producer is scheduled for immediate intensive development. At least 10 new wells will be started within the next few weeks and this work may become an important factor in the near future. This well has consistently built up from day to day during the past two weeks with the result that it is at present flowing 1,960 bbls. of unusually clean 27.6 gravity oil daily. Natural gas, 1,300,000 feet per day, is averaging a little better than 1 gallon of casinghead for each 1,000 feet of gas treated. This company, which controls 240 acres in the immediate locality, has already started rig construction for two new wells which will be spudded in immediately. The California Western Oil Co. is also starting work and a rig is going up for the first well, which will be located on the Havenstrite property in Section 17-11-23. This project will be a direct offset to No. 2 Sheehan of the Signal Oil & Gas Co., located in Section 8-11-23. The North American Consolidated staked a location several days ago for a new well in the northwest quarter of Section 8-11-23 and immediate action is contemplated. Fred Turner has also mapped a new location and material will be on ground for the initial spud which will be located in the southeast quarter of Section 10-11-23. This well will offset the Union's No. 1 Houchin, which was completed as a small deep-zone completion a year or so ago. The Union is starting a new well in Section 8-11-24, about 1,500 feet southeast of the Signal's recent completion. The Standard owns Section 5-11-23 in fee and this property, aggregating 640 acres, will undoubtedly be developed immediately as it is just north of the Signal's Sheehan property and is therefore proven territory. The Rio Grande, Shell and several other operators can also be expected to start early work.

The new well of the Signal Oil & Gas Co. and resulting development work will probably be the center of attraction in the Midway-Sunset Field during the course of the next several months as this section might show substantial production over an extensive area. The Signal Oil & Gas Co.'s new well is located in the Maricopa, or Sunset, section of the Midway-Sunset Field and is several miles removed from the acreage being developed at Midway by the Republic Petroleum and Chanslor-Canfield Midway Oil Co. It is also separate and distinct from the area being developed south of the Republic's holdings by the Cypress Petroleum, Shell, Standard and Union. Two small wells were completed in the Midway-Sunset Field during the past week, the Ozena Oil Co.'s No. 1 being finished as a 20-bbl. p ner from 2,928 feet and the Union's Boss in Section 10-11-23 being recompleted flowing 35 bbls. daily from 5,605 feet.

**Seal Beach**

Two wells were finished in the Seal Beach Field during the past week and a check indicates the probable completion of several more in the near future as the Associated, Standard and Marland each has one or more standing cemented above the pay. The Marland recompleted No. 17 Bixby this week flowing 1,680 bbls. per day from 5,700 feet, the hole having been plugged back from 5,740 feet. No. 12 Bryant of the Associated was a new well drilled to 5,644 feet and finished with a 6⅝-inch oil string. It tanked 1,846 bbls. during the initial 24-hour test and may ultimately show a much larger production as it is building up. The Standard has just finished No. 6 San Gabriel at 5,026 feet and it will be tanking oil within the next 24 hours. This field is producing approximately 48,000 bbls. per day at the present time with several new wells nearing completion. This is more than 15,000 bbls. per day in excess of the amount which will be allowed under the projected curtailment, which is scheduled to become effective shortly.

**Richfield**

Operators in the Richfield district met during the early part of the past week and expressed themselves as being in sympathy with the projected curtailment program. Kenneth Hunter of the Continental Oil Co., George W. Johnson of the Federal Oil Co. and F. W. Lake of the Union Oil Co. were selected to work out the details and they subsequently reported a definite plan for the approval of Umpire van Deinse. Eight strings of tools are in operation in this field at present and present plans call for the starting of three more in the near future as rigs for this number are already in course of construction. It has been a long time since any development work has been done in the Coyote Field of Los Angeles Basin and while future drilling will continue to be restricted the Standard has found it necessary to start three new wells on the Emory lease. Nos. 43, 44 and 45 were spudded in last week and the entire trio are already down more than 2,500 feet.

## LOUISIANA-ARKANSAS

(Continued from Page 46)

6-inch at 2,330 feet on No. 4 Bryson, Section 8-17-16, total depth 2,773 feet.

Mooringsport—Falcon Drilling Co.'s No. 1-B Muslow, Section 29-20-15, is in chalk rock at 1,450 feet.

Oil City—W. D. Chew tested salt water with a show of gas in No. 2-B fee, Section 33-21-16, and is arranging to set siphon, total depth 907 feet. Magnolia Petroleum Co. is drilling shale at 2,660 feet on No. 18 Doan-Thigpen, Section 6-20-15. C. B. Moore set 80 feet of 10-inch on No. 5 Dillon, Section 22-20-15, and is drilling at 500 feet. Shreveport Oil Corp.'s No. 1 Cheshire, Section 32-21-15, is drilling at 1,400 feet. Simplex Oil Co.'s No. 4 Baird, Section 22-20-15, is drilling at 2,100 feet.

Pine Island—Dixie Oil Co. is drilling out a bridge in No. 92 Dillon, Section 13-21-15, and is down 5,145 feet, total depth 6,099 feet; No. 96 Dillon, 2,210 feet south and 540 feet east NW cor. Section 13-21-15, set 10-inch at 40 feet and 6-inch at 1,470 feet. C. H. French set 6-inch at 1,330 feet on No. 5 Muslow, Section 31-21-15, and is waiting on standard rig to pump, total depth 1,695 feet. Magnolia Petroleum Co. is drilling sand rock at 4,153 feet on No. 18 Dillon, Section 24-21-15.

**LaSalle Parish**

Urania—Arkansas Natural Gas Corp. set 112 feet of 10-inch on No. 11-B Urania, 350 feet east and 200 feet south NW cor. SW NW, Section 17-10-2e, and is coring at 1,543 feet. G. W. Zoder made location for No. 2 M. H. King in the NE cor. SE NE Section 13-10-1e.

**Monroe District**

Morehouse Parish—Interstate Gas Co. cemented 6-inch at 2,176 feet on No. 1 Crowder-Moore, Section 31-21-5, and at 2,113 feet on No. 1 Flemming, Section 15-20-14. Southern Carbon Co. has derrick up for No. 2 Griffing in Section 10-20-4, and is drilling No. 2 Miles, Section 1-20-4, at 2,212 feet; No. 9 Tensas, Section 2-20-4, cemented 6-inch at 2,130 feet. United Carbon Co. made location 660 feet north and east SW cor. SE, Section 2-20-4, for No. 2 Patton and 660 feet west and south NE cor. NE, same section, for No. 3.

Ouachita Parish—Greenwood Production Co.'s No. 2 Phillips fee, 660 feet north and 2,274 feet west SE cor. Section 18-19-4, set 12½-inch at 156 feet and 8-inch at 784 feet. G. E. Jordan has rig up to drill No. 1 Anding, Section 18-18-5. LaDel Oil Properties' No. 47 fee, Section 6-19-5, set 12-inch at 182 feet. Magnolia Petroleum Co. set 10¾-inch second string at 850 feet on No. 1 fee, Section 14-18-4, and is drilling No. 2 U. S., Section 30-19-5, below 100 feet; No. 3 U. S., Section 18-19-5, has rig up. Maury Drilling Co.'s No. 5 McEwen, Section 29-19-4, is drilling at 1,500 feet.

Nemours Corp. made location 920 feet south and 1,125 feet west NE cor. Section 18-19-4, for No. 2 Frierson and 1,470 feet south and 2,090 feet west NE cor. same section, for No. 3. Pioneer Oil & Gas Co.'s No. 1 Fudicker is a location 462 feet south and west center Section 18-18-5. Pipes & Mack set 10-inch at 817 feet on No. 2 McGee, Section 10-18-4, and are drilling at 1,600 feet. Southern Carbon Co.'s No. 12 Fairbanks, Section 34-20-4, set 12-inch at 184 feet and 8-inch at 862 feet.

Union Parish—Feazel and others' No. 1 Peek, Section 16-20-4, is drilling at 1,700 feet. Natural Gas & Producing Co. has rig up for No. 1 Nolan in Section 11-20-3.

**Red River Parish**

Bull Bayou—Gulf Refining Co. has rig up for No. 38 Robinson, 744 feet north and 1,693 feet west SE cor. Section 25-13-11.

**Richland Parish**

Magnolia Petroleum Co. is drilling at 2,362 feet on No. 1 Noble, Section 36-16-5, and at 2,222 feet on No. 1 Sartor Co., Section 5-15-6.

**Webster Parish**

Cotton Valley—Louisiana Oil Refining Corp. cemented 9-inch casing at 3,500 feet on No. 6 Gray, Section 28-21-10; No. 3 Nelson in the same section set 498 feet of 12½-inch surface pipe and is drilling hard sand at 2,100 feet. Magnolia Petroleum Co.'s No. 6 Marshall, Section 21-21-10, is in hard lime at 4,234 feet; No. 1 McCook & Hibbler, Section 21-21-10, had 115 feet of salt water in the pipe on drill stem test at 4,812 feet and is shut down for orders.

Sarepta and Shongaloo—Magnolia Petroleum Co. is drilling chalk at 2,135 feet on No. 1 Adkins, Section 4-22-9; No. 1 Cook, Section 2-22-11, is in limy shale at 2,853 feet; No. 1 Denman, Section 1-22-11, cemented 21 feet of the bottom to cut off salt water, total depth 2,719 feet.

**ARKANSAS**

**Johnson County**

Arkansas Natural Gas Corp.'s No. 2 Bynum, Section 12-10-24, is fishing for bit, total depth 2,500 feet; No. 1 McPherson, drilling deeper, is in hard sand at 3,330 feet.

**Ouachita County**

Mount Holly—Cumberland Oil Co. has rig up for No. 1 Burton, Section 25-15-18. E. M. Jones and Atlantic Oil Co.'s No. 1 Allen, Section 25-15-18, cored a hard sand showing water at 2,831 feet and is drilling. Magnolia Petroleum Co. cored No. 1 Wilson, Section 25-15-18, at 2,103 feet. McDonald Brothers are arranging to deepen No. 1 Wilson, Section 25-15-18, total depth 2,858 feet. Root Refineries, Inc., is drilling No. 1 Wilson, Section 25-15-18, at 550 feet with 10-inch cemented at 173 feet.

**Union County**

El Dorado—Gulf Refining Co.'s No. 1 Cook, Section 1-18-15, topped the red shales at 2,859 feet and is coring at 2,955 feet. Standard Oil Co. set 4½-inch liner at 2,255 feet on No. 5 Burns, Section 31-17-15, and temporarily abandoned No. 6 Goodwin, a derrick, in Section 36-17-16.

Champagnolle—Arkansas Natural Gas Corp.'s No. 1 Morris, Section 7-17-13, cemented 6⅝-inch at 3,022 feet, total depth 3,037 feet. Magnolia Petroleum Co. set 210 feet of 15½-inch on No. 1 Kelly, Section 9-17-14, and is drilling at 1,350 feet. Ohio Oil Co.'s No. 1 B. H. Raulston, Section 12-17-14, is coring at 3,001 feet and No. 1 Oliver, Section 7-17-13, set 6⅝-inch at 3,042 feet, total depth 3,048 feet. Oilwell Corp.'s No. 1-D Perdue, Section 9-17-14, tested 15,000,000 feet of gas with a spray of oil and recemented casing at 2,804 feet to shut off the gas, total depth 2,808 feet.

**EAST TEXAS**

**Harrison County**

Nick Barbare is drilling No. 1-A Bahan-Furrh, James Short Survey, at 150 feet, second hole; No. 1 Fuller-Furrh in the same survey, cemented 6-inch at 2,318 feet.

**Panola County**

Eureka Natural Gas Co.'s No. 3 Gully, J. Matthews Survey, is drilling at 2,127 feet and No. 4 is drilling at 1,607 feet. Magnolia Petroleum Co.'s No. 3 T. C. Adams, J. Matthews Survey, is in lime at 2,135 feet and No. 4 Baker tested 860,000 feet of gas at 2,706 feet and is coring at 2,723 feet; No. 3 Fletcher, B. C. Jordan Survey, is coring at 2,273 feet.

## LA.-ARK. WILDCATS

(Continued from Page 46)

ner of Caddo Parish from 3,072 feet where it was abandoned several years ago by Ohio Oil Co., to an intended 4,500 feet "unless."

Gulf Refining Co. is continuing its torsion balance surveys of Bossier Parish from all directions surrounding the Bellevue Dome, on the southwestern flank of which G. W. Wetherbee this week tested salt water and abandoned No. 1-D fee, Section 21-19-11, at 422 feet. It is understood he plans further drilling in that locality. Two miles south of Plain Dealing, in the north central part of Bossier and 20 miles northeast of Bellevue, Walker and others are at work again on No. 1 Antrim, Section 28-22-13, which has been under way for the last two years. They pulled 6⅝-inch cemented at 2,850 feet and recemented at 3,019 feet.

**Two Holes to Be Deepened**

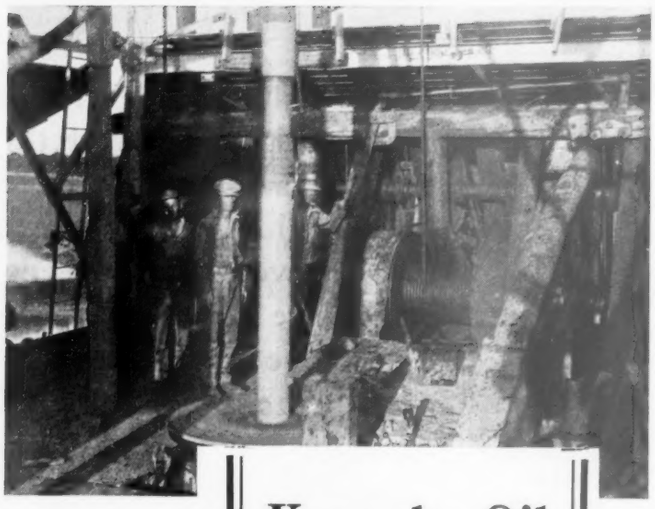
Benedum & Trees Oil Co.'s No. 1 Mahoney, Section 22-14-12, DeSoto Parish, dry at 2,618 and 2,624 feet, was abandoned after a salt water test at 2,905 feet, and Luke Case's No. 1 Boatright, Section 3-10-13, is arranging to go deeper after testing dry following a show of oil and gas at 3,045 feet which failed to produce. R. O. Roy's No. 1 Sample, Section 1-13-14, also was dry at 2,904 feet and is reaming to bottom to go deeper.

V. L. Shaw and others made a drill stem test on No. 1 Voss, Section 1-20-3, Lincoln Parish, at 2,480 feet, got 22 joints of salt water, and are drilling ahead. Six miles northeast of this wildcat, The Texas Company has made location for No. 1 F. M. Fuller in Section 9-21-2w on a machine high covered by a big block assembled during the last few months. Several miles southeast of these two wells George O. Baird has a block of 3,500 acres centering around Section 23-17-1w, Jackson Parish, on which he will make location shortly, probably in that section, for a 3,000-foot hole.

S. D. McDaniels' No. 2 Clark-Morse, Section 23-5-6, Natchitoches Parish, showed for 1,000,000 feet of gas with salt water on a drill stem test of 8 feet of sand, total depth 2,536 feet, after a previous test at 2,431 feet had proven dry. These tests were of more than passing interest because of the performance of wells drilled in that neighborhood two or three years ago which looked for a while as though they might be commercial producers repeating on the western end of the Angelina-Caldwell flexure what Urania had done on the eastern end.

**Gay Well Fails to Get Production**

Failing to get production anywhere along the line in No. 1 Sabine Lumber Co., Section 13-7-14, Sabine Parish, a half mile east of his producer, R. L. Gay temporarily abandoned the wildcat at 2,936 feet. His No. 2 Bowman-Hicks in Section 14, produced an initial 50 bbls. of 41 gravity crude from the Naca-



# Keep the Oil Where It Belongs

. . . in the pipes! . . . with Permanite, the original highly-compressed asbestos sheet packing.

Permanite resists heat and high pressures to an unusual degree — a marked advantage in oil lines. It does not shred, it does not get soft or sticky, it does not blow out. It *does* stand up under long, steady use and keeps joints tight.

Use it on air, steam and water lines as well—or for any liquids difficult to handle. And in pumps, compressors, boilers—wherever there are joints that require a sheet packing that holds and lasts.

[ Permanite has the backing of the same world-wide organization that manufactures Ferodo Friction Linings. Both are acknowledged to be the world's standards. ]

FERODO AND ASBESTOS
*Incorporated*
New Brunswick, New Jersey

K-4-18-29

PERMANITE

Trade Mark Registered U. S. Patent Office

Ohio County, when Hupp and Duff drilled to a total depth of 615 feet in 78 hours.

Marion French, of Mount Sterling, Ky., is back in the Owensboro Field and will start operating at once.

Records in the county clerk's office in Daviess County show that a total of 8,500 leases have been taken on land under which it was believed there were deposits of oil. The lease on the W. G. Hayden farm, on whose land the big producer was brought in at Andersonville, in the Red Hill section, and brought to Davies County the big rush, was one of the early oil leases. Mr. Hayden, who now owns and is having operated one of the outstanding leases in the field, carried leases on thousands of acres in the southern end of the county for 20 years. Each day at present there are several leases filed, and frequently large bunches of acreage are lodged for record by some company or individual, for wildcatting. Operators believe there is oil to be found at low depths, but the expense of drilling thus far has held up projects that may later result in big oil development.

The Ohio Oil Co. is starting a second test on the George McManama farm, about 4 miles north of Calhoun in McLean County. The initial venture on this lease is a fair producer under pump.

**Pipe Line Deliveries**

Report of the State Tax Commission of Kentucky shows that during February the Illinois Pipe Line Co. delivered to the Ohio Oil Co. a total of 72,233.17 bbls. of oil, valued at $110,516.77. Of this amount the county received $552.63. The Producers Pipe Line Co. gathered 14,995.25 bbls. valued at $22,942.73 on which Daviess County gets $114.70. All of the oil brought $1.53 a barrel. With this additional tax money some of the bad highways should be improved so that the oil men can get into the country without going through a sea of mud and water.

The Armistead Oil Co. is starting a well on the H. C. Metcalf farm, in the Friendship Church area of Ohio County.

The Eastern Gulf Oil Co. instead of plugging its No. 6 on the Morgan Ruby farm, in the Red Hill section of Daviess County, in the Jett sand, concluded to test the Barlow formation in hope of finding a pay there.

Wood Oil Co., Inc. is drilling No. 9 R. A. Duke farm, of 200 acres, in the Sunnydale area of Ohio County. Sunnydale Oil Co. is drilling No. 1 on the V. R. Ferguson 47 acres, same area.

## STEEL PRODUCTION UP; LARGE GAIN IN MARCH

By B. E. V. Luty

PITTSBURGH, Pa., Apr. 15.—The steel industry is outdoing itself in the matter of production and yet there is no sign of overproduction for shipping requirements continue heavy. To sum up, January production of steel ingots was slightly above the December rate and the rate for the whole of 1928, which were substantially the same. Then February brought a large gain and the official report for March, just issued, shows a further large gain while the prospects are that this month will have about the same rate as March and may even show a little gain.

The March rate of production was 12.8 per cent above the highest rate in 1928, which was shown for October, while April had been just a shade under October. Production in the first three months of the year was 11.9 per cent above that in the same period of last year, although that was record high for such a part of the year, by a small margin.

About two-thirds of the gain over last year is due to heavier requirements of the automobile industry. Moderately close estimates can be made that the automobile industry absorbed about 16 per cent of the steel made in the first quarter of last year and between 21 and 22 per cent in the first quarter of this year. In a rough way it may be guessed that the agricultural implement industry accounted for the remainder of this year's increase, which leaves it that all other steel consumption has run about the same this year as last, and that of course is doing very well. Consumption in the oil fields is off from a year ago, but there is more steel going into line pipe, chiefly for natural gas. Fabricated structural steel production has run fully one-third heavier. While freight car buying has been heavy since January 1, this did not affect steel production to any material extent in the first three months as it takes time to get the orders into execution and deliveries are well spread out. About 45,000 freight cars have been bought since January 1.

The official report of steel ingot production in March computes the rate at 103.02 per cent of capacity, but the capacity rating is that of December 31, 1927, and present capacity may be guessed at about 3 per cent greater. A fresh capacity rating, for December 31, 1928, will probably be issued within a few weeks. Thus it may be taken that March production was practically at capacity, which means that open-hearth steel making departments ran above their ratings, with favorable weather and hard driving, as there was no little slackness in operation of Bessemer departments.

While the automobile industry has continued to place orders very freely this does not prove that there will be no recession in automobile production in the near future. When the bar, sheet and strip mills are far behind in deliveries as they have been lately with four to six weeks of actual shipping orders piled up, automobile and parts makers naturally buy ahead, to be on the safe side. Later they can postpone some of the deliveries, for of course they never hesitate to do that when circumstances require. Shipments of automobiles to dealers have far outrun dealers' sales, but the automobile makers do not themselves overproduce, never accumulating any stocks of their own. Some sheet makers state that decreased automobile sheet demand would not bother them at all, as consumption of sheets in some other lines is increasing, particularly in sheet products for building and in freight car manufacture.

The long mentioned natural gas line from the Monroe Field, Louisiana, to St. Louis, has now been placed, involving about 115,000 tons of line pipe. The 22-inch was distributed 325 miles to the A. O. Smith Corp., Milwaukee, 204 miles to the National Tube Co. and 25 miles to Spang, Chalfant & Co., while National Tube Co. will also furnish 25 miles of 16-inch feeder pipe, to run from Richland, La., to Monroe, La. Another order reported, but without details, is for 200 miles of 10-inch, for an oil line in the Southwest. There remains the natural gas line from Monroe to Birmingham, Chattanooga and Atlanta, which is expected to come to a head some time.

## MRS. JOHN O'BRIEN DEAD

LIMA, Ohio, Apr. 16.—Mrs. Louise Newell O'Brien, widow of John O'Brien, for years at the head of the Prairie Oil & Gas Co. and who died suddenly in Nowata, Okla. some years ago, died in Stritas hospital in this city after a four months' illness. Mrs. O'Brien was a niece of the late Daniel O'Day, noted pipe line executive, and her father, Patrick Newell, was division superintendent of the National Transit Co. up to the time of his death.

## ELECTRICIANS WILL MEET

The Petroleum Industry Electrical Association will hold its annual meeting in Tulsa April 15, 16 and 17. The organization was formed in March, 1928, at a meeting held in Fort Worth, Tex. The membership is composed of superintendents of electrical power, telegraph and telephone of oil, gas and pipe line companies and the object of the association is educational and fraternal, for better service in the branch of the oil industry represented by the membership. T. J. McMahon, of The Texas Company, Wichita Falls, Tex., is president and H. E. Brown of the Prairie Pipe Line Co., Independence, Kans., is secretary.

## CALIFORNIA FIELDS

(Continued from Page 56)

but this well subsequently cleaned up to some extent and it is being listed for completion doing 280 bbls. daily from 3,844 feet. The city trustees of Huntington Beach enacted a drastic city ordinance recently regulating the construction of wooden derricks. The new ordinance, which resulted from the demolition of several wooden derricks in the town lot area during a recent severe windstorm, affects eixisting structures as well as any new derricks which might be erected in the future. The new statute is in the form of a rig guying ordinance which requires operators to reinforce wooden derricks by using a one-fourth inch cable which shall extend from a point not more than 20 feet from the top of the derrick and be anchored not less than 65 feet from the corners of the rig's base. A strict enforcement of this ordinance might result in considerable difficulty for operators drilling on a 50-foot lot but this situation will probably take care of itself as several operators have already found it mutually advantageous to diregard property lines in the anchoring of these gpy wires.

**Midway-Sunset**

The Signal Oil & Gas Co.'s No. 2 Sheehan, a recent completion in the Midway-Sunset Field of Kern County doing 1,175 bbls. daily from 3,242 feet, has proven a powerful stimulant and the entire area around this new producer is scheduled for immediate intensive development. At least 10 new wells will be started within the next few weeks and this work may become an important factor in the near future. This well has consistently built up from day to day during the past two weeks with the result that it is at present flowing 1,960 bbls. of unusually clean 27.6 gravity oil daily. Natural gas, 1,300,000 feet per day, is averaging a little better than 1 gallon of casinghead for each 1,000 feet of gas treated. This company, which controls 240 acres in the immediate locality, has already started rig construction for two new wells which will be spudded in immediately. The California Western Oil Co. is also starting work and a rig is going up for the first well, which will be located on the Havenstrite property in Section 17-11-23. This project will be a direct offset to No. 2 Sheehan of the Signal Oil & Gas Co., located in Section 8-11-23. The North American Consolidated staked a location several days ago for a new well in the northwest quarter of Section 8-11-23 and immediate action is contemplated. Fred Turner has also mapped a new location and material will be on ground for the initial spud which will be located in the southeast quarter of Section 10-11-23. This well will offset the Union's No. 1 Houchin, which was completed as a small deep-zone completion a year or so ago. The Union is starting a new well in Section 8-11-24, about 1,500 feet southeast of the Signal's recent completion. The Standard owns Section 5-11-23 in fee and this property, aggregating 640 acres, will undoubtedly be developed immediately as it is just north of the Signal's Sheehan property and is therefore proven territory. The Rio Grande, Shell and several other operators can also be expected to start early work.

The new well of the Signal Oil & Gas Co. and resulting development work will probably be the center of attraction in the Midway-Sunset Field during the course of the next several months as this section might show substantial production over an extensive area. The Signal Oil & Gas Co.'s new well is located in the Maricopa, or Sunset, section of the Midway-Sunset Field and is several miles removed from the acreage being developed at Midway by the Republic Petroleum and Chanslor-Canfield Midway Oil Co. It is also separate and distinct from the area being developed south of the Republic's holdings by the Cypress Petroleum, Shell, Standard and Union. Two small wells were completed in the Midway-Sunset Field during the past week, the Ozena Oil Co.'s No. 1 being finished as a 20-bbl. pumper from 2,928 feet and the Union's No. 3 Boss in Section 10-11-23 being recompleted flowing 35 bbls. daily from 5,605 feet.

**Seal Beach**

Two wells were finished in the Seal Beach Field during the past week and a check indicates the probable completion of several more in the near future as the Associated, Standard and Marland each has one or more standing cemented above the pay. The Marland recompleted No. 17 Bixby this week flowing 1,680 bbls. per day from 5,700 feet, the hole having been plugged back from 5,740 feet. No. 12 Bryant of the Associated was a new well drilled to 5,644 feet and finished with a 6⅝-inch oil string. It tanked 1,846 bbls. during the initial 24-hour test and may ultimately show a much larger production as it is building up. The Standard has just finished No. 6 San Gabriel at 5,026 feet and it will be tanking oil within the next 24 hours. This field is producing approximately 48,000 bbls. per day at the present time with several new wells nearing completion. This is more than 15,000 bbls. per day in excess of the amount which will be allowed under the projected curtailment, which is scheduled to become effective shortly.

**Richfield**

Operators in the Richfield district met during the early part of the past week and expressed themselves as being in sympathy with the projected curtailment program. Kenneth Hunter of the Continental Oil Co., George W. Johnson of the Federal Oil Co. and F. W. Lake of the Union Oil Co. were selected to work out the details and they subsequently reported a definite plan for the approval of Umpire van Deinse. Eight strings of tools are in operation in this field at present and present plans call for the starting of three more in the near future as rigs for this number are already in course of construction. It has been a long time since any development work has been done in the Coyote Field of Los Angeles Basin and while future drilling will continue to be restricted the Standard has found it necessary to start three new wells on the Emory lease. Nos. 43, 44 and 45 were spudded in last week and the entire trio are already down more than 2,500 feet.

## LOUISIANA-ARKANSAS

(Continued from Page 46)

6-inch at 2,330 feet on No. 4 Bryson, Section 8-17-16, total depth 2,773 feet.

Mooringsport—Falcon Drilling Co.'s No. 1-B Muslow, Section 29-20-15, is in chalk rock at 1,450 feet.

Oil City—W. D. Chew tested salt water with a show of gas in No. 2-B fee, Section 33-21-16, and is arranging to set siphon, total depth 907 feet. Magnolia Petroleum Co. is drilling shale at 2,660 feet on No. 18 Doan-Thigpen, Section 6-20-15. C. B. Moore set 80 feet of 10-inch on No. 5 Dillon, Section 22-20-15, and is drilling at 500 feet. Shreveport Oil Corp.'s No. 1 Cheshire, Section 32-21-15, is drilling at 1,400 feet. Simplex Oil Co.'s No. 4 Baird, Section 22-20-15, is drilling at 2,100 feet.

Pine Island—Dixie Oil Co. is drilling out a bridge in No. 92 Dillon, Section 13-21-15, and is down 5,145 feet, total depth 6,099 feet; No. 96 Dillon, 2,210 feet south and 540 feet east NW cor. Section 13-21-15, set 10-inch at 40 feet and 6-inch at 1,470 feet. C. H. French set 6-inch at 1,330 feet on No. 5 Muslow, Section 31-21-15, and is waiting on standard rig to pump, total depth 1,695 feet. Magnolia Petroleum Co. is drilling sand rock at 4,153 feet on No. 18 Dillon, Section 24-21-15.

**LaSalle Parish**

Urania—Arkansas Natural Gas Corp. set 112 feet of 10-inch on No. 11-B Urania, 350 feet east and 200 feet south NW cor. SW NW, Section 17-10-2e, and is coring at 1,543 feet. G. W. Zoder made location for No. 2 M. H. King in the NE cor. SE NE Section 13-10-1e.

**Monroe District**

Morehouse Parish—Interstate Gas Co. cemented 6-inch at 2,176 feet on No. 1 Crowder-Moore, Section 31-21-5, and at 2,113 feet on No. 1 Flemming, Section 15-20-14. Southern Carbon Co. has derrick up for No. 2 Griffing in Section 10-20-4, and is drilling No. 2 Miles, Section 1-20-4, at 2,212 feet; No. 9 Tensas, Section 2-20-4, cemented 6-inch at 2,130 feet. United Carbon Co. made location 660 feet north and east SW cor. SE, Section 2-20-4, for No. 2 Patton and 660 feet west and south NE cor. NE, same section, for No. 3.

Ouachita Parish—Greenwood Production Co.'s No. 2 Phillips fee, 660 feet north and 2,274 feet west SE cor. Section 18-19-4, set 12½-inch at 156 feet and 8-inch at 784 feet. G. E. Jordan has rig up to drill No. 1 Anding, Section 18-18-5. LaDel Oil Properties' No. 47 fee, Section 6-19-5, set 12-inch at 182 feet. Magnolia Petroleum Co. set 10¾-inch second string at 850 feet on No. 1 fee, Section 14-18-4, and is drilling No. 2 U. S., Section 30-19-5, below 100 feet; No. 3 U. S., Section 18-19-5, has rig up. Maury Drilling Co.'s No. 5 McEwen, Section 29-19-4, is drilling at 1,500 feet.

Nemours Corp. made location 920 feet south and 1,125 feet west NE cor. Section 18-19-4, for No. 2 Frierson and 1,470 feet south and 2,090 feet west NE cor. same section, for No. 3. Pioneer Oil & Gas Co.'s No. 1 Fudicker is a location 462 feet south and west center Section 18-18-5. Pipes & Mack set 10-inch at 817 feet on No. 2 McGee, Section 10-18-4, and are drilling at 1,600 feet. Southern Carbon Co.'s No. 12 Fairbanks, Section 34-20-4, set 12-inch at 184 feet and 8-inch at 862 feet.

Union Parish—Feazel and others' No. 1 Peek, Section 16-20-4, is drilling at 1,700 feet. Natural Gas & Producing Co. has rig up for No. 1 Nolan in Section 11-20-3.

**Red River Parish**

Bull Bayou—Gulf Refining Co. has rig up for No. 38 Robinson, 744 feet north and 1,693 feet west SE cor. Section 25-13-11.

**Richland Parish**

Magnolia Petroleum Co. is drilling at 2,362 feet on No. 1 Noble, Section 36-16-5, and at 2,222 feet on No. 1 Sartor Co., Section 5-15-6.

**Webster Parish**

Cotton Valley—Louisiana Oil Refining Corp. cemented 9-inch casing at 3,500 feet on No. 6 Gray, Section 28-21-10; No. 3 Nelson in the same section set 498 feet of 12½-inch surface pipe and is drilling hard sand at 2,100 feet. Magnolia Petroleum Co.'s No. 6 Marshall, Section 21-21-10, is in hard lime at 4,234 feet; No. 1 McCook & Hibbler, Section 21-21-10, had 115 feet of salt water in the pipe on drill stem test at 4,812 feet and is shut down for orders.

Sarepta and Shongaloo—Magnolia Petroleum Co. is drilling chalk at 2,135 feet on No. 1 Adkins, Section 4-22-9; No. 1 Cook, Section 2-22-11, is in limy shale at 2,853 feet; No. 1 Denman, Section 1-22-11, cemented 21 feet of the bottom to cut off salt water, total depth 2,719 feet.

**ARKANSAS**

**Johnson County**

Arkansas Natural Gas Corp.'s No. 2 Bynum, Section 12-10-24, is fishing for bit, total depth 2,500 feet; No. 1 McPherson, drilling deeper, is in hard sand at 3,330 feet.

**Ouachita County**

Mount Holly—Cumberland Oil Co. has rig up for No. 1 Burton, Section 25-15-18. E. M. Jones and Atlantic Oil Co.'s No. 1 Allen, Section 25-15-18, cored a hard sand showing water at 2,831 feet and is drilling. Magnolia Petroleum Co. cored No. 1 Wilson, Section 25-15-18, at 2,103 feet. McDonald Brothers are arranging to deepen No. 1 Wilson, Section 25-15-18, total depth 2,858 feet. Root Refineries, Inc., is drilling No. 1 Wilson, Section 25-15-18, at 550 feet with 10-inch cemented at 173 feet.

**Union County**

El Dorado—Gulf Refining Co.'s No. 1 Cook, Section 1-18-15, topped the red shales at 2,859 feet and is coring at 2,955 feet. Standard Oil Co. set 4½-inch liner at 2,255 feet on No. 5 Burns, Section 31-17-15, and temporarily abandoned No. 6 Goodwin, a derrick, in Section 36-17-16.

Champagnolle—Arkansas Natural Gas Corp.'s No. 1 Morris, Section 7-17-13, cemented 6⅝-inch at 3,022 feet, total depth 3,037 feet. Magnolia Petroleum Co. set 210 feet of 15½-inch on No. 1 Kelly, Section 9-17-14, and is drilling at 1,350 feet. Ohio Oil Co.'s No. 1 B. H. Raulston, Section 12-17-14, is coring at 3,001 feet and No. 1 Oliver, Section 7-17-13, set 6⅝-inch at 3,042 feet, total depth 3,048 feet. Oilwell Corp.'s No. 1-D Perdue, Section 9-17-14, tested 15,000,000 feet of gas with a spray of oil and recemented casing at 2,804 feet to shut off the gas, total depth 2,808 feet.

**EAST TEXAS**

**Harrison County**

Nick Barbare is drilling No. 1-A Bahan-Furrh, James Short Survey, at 150 feet, second hole; No. 1 Fuller-Furrh in the same survey, cemented 6-inch at 2,318 feet.

**Panola County**

Eureka Natural Gas Co.'s No. 3 Gully, J. Matthews Survey, is drilling at 2,127 feet and No. 4 is drilling at 1,607 feet. Magnolia Petroleum Co.'s No. 3 T. C. Adams, J. Matthews Survey, is in lime at 2,135 feet and No. 4 Baker tested 860,000 feet of gas at 2,706 feet and is coring at 2,723 feet; No. 3 Fletcher, B. C. Jordan Survey, is coring at 2,273 feet.

## LA.-ARK. WILDCATS

(Continued from Page 46)

ner of Caddo Parish from 3,072 feet where it was abandoned several years ago by Ohio Oil Co., to an intended 4,500 feet "unless."

Gulf Refining Co. is continuing its torsion balance surveys of Bossier Parish from all directions surrounding the Bellevue Dome, on the southwestern flank of which G. W. Wetherbee this week tested salt water and abandoned No. 1-D fee, Section 21-19-11, at 422 feet. It is understood he plans further drilling in that locality. Two miles south of Plain Dealing, in the north central part of Bossier and 20 miles northeast of Bellevue, Walker and others are at work again on No. 1 Antrim, Section 28-22-13, which has been under way for the last two years. They pulled 6⅝-inch cemented at 2,850 feet and recemented at 3,019 feet.

**Two Holes to Be Deepened**

Benedum & Trees Oil Co.'s No. 1 Mahoney, Section 22-14-12, DeSoto Parish, dry at 2,618 and 2,624 feet, was abandoned after a salt water test at 2,905 feet, and Luke Case's No. 1 Boatright, Section 3-10-13, is arranging to go deeper after testing dry following a show of oil and gas at 3,045 feet which failed to produce. R. O. Roy's No. 1 Sample, Section 1-13-14, also was dry at 2,904 feet and is reaming to bottom to go deeper.

V. L. Shaw and others made a drill stem test on No. 1 Voss, Section 1-20-3, Lincoln Parish, at 2,480 feet, got 22 joints of salt water, and are drilling ahead. Six miles northeast of this wildcat, The Texas Company has made location for No. 1 F. M. Fuller in Section 9-21-2w on a machine high covered by a big block assembled during the last few months. Several miles southeast of these two wells George O. Baird has a block of 3,500 acres centering around Section 23-17-1w, Jackson Parish, on which he will make location shortly, probably in that section, for a 3,000-foot hole.

S. D. McDaniels' No. 2 Clark-Morse, Section 23-5-6, Natchitoches Parish, showed for 1,000,000 feet of gas with salt water on a drill stem test of 8 feet of sand, total depth 2,536 feet, after a previous test at 2,431 feet had proven dry. These tests were of more than passing interest because of the performance of wells drilled in that neighborhood two or three years ago which looked for a while as though they might be commercial producers repeating on the western end of the Angelina-Caldwell flexure what Urania had done on the eastern end.

**Gay Well Fails to Get Production**

Failing to get production anywhere along the line in No. 1 Sabine Lumber Co., Section 13-7-14, Sabine Parish, a half mile east of his producer, R. L. Gay temporarily abandoned the wildcat at 2,936 feet. His No. 2 Bowman-Hicks in Section 14, produced an initial 50 bbls. of 41 gravity crude from the Naca-

# More threads per dollar of die means *lower cost* for crude

Experienced oil men have found that to thread pipe at lower cost, and get leak-tight connections, BETTER DESIGNED DIES are needed.

That's why you see so many WILLIAMS "Rapiduction" Pipe Threading Machines.

***Radial* threading saves the dies**

Instead of lifting material from the pipe to form threads, the WILLIAMS dies thread *radially* — peeling off the metal, on the same principle by which the modern lathe *turns* a steel shaft.

The dies meet less resistance—threads are cleaner and faster—power cost is lower.

And the dies cut *four times as many threads* before regrinding!

This *faster* threading machine has many other points that will help you get *lower thread costs.* Write for Bulletin "O".

**WILLIAMS TOOL CORPORATION**
**Erie, Pa.**

*Canadian Plant:* Brantford, Ontario

***Unequalled economy of dies.***

The WILLIAMS "Rapiduction" uses high-speed steel dies—small enough to be very economical, big enough to "stand the gaff." Supported in large die-holders.

And what a difference it makes in your die costs! For example, a complete set of dies for the 12-inch "Rapiduction" weighs only 8 lbs.—as compared to 144 lbs. of big dies for the ordinary machine of this size.

**WILLIAMS RAPIDUCTION**
PIPE, NIPPLE AND BOLT THREADING MACHINES

toch at 2,130 feet and is still producing at that rate, but this later test was dry at that depth. His No. 3 Bowman-Hicks in Section 14 is drilling lime at 3,166 feet, also having tested dry in the Nacatoch and again at 2,560 feet.

The Texas Company abandoned No. 1 Keifer, Section 11-18-4, Ashley County, Arkansas, as a dry hole at 3,574 feet, where it was in a hard but nonigneous rock, adding another to the long list of failures that has attended recent exploration of the red beds in southeastern Arkansas. Nevertheless, Ohio Oil Co. and Atlantic Oil Producing Co. are going ahead with preparations to deepen two older wells, the latter's being a prospect that was abandoned before the current exploration got under way last summer.

Ohio Oil Co. is preparing to deepen No. 2 Southern Lumber Co. in Section 19-16-9, Bradley County, in which it cored 3 feet of shale with thin streaks of oil-saturated sand, total depth 3,217 feet, but abandoned as a dry hole at that depth, and Atlantic Oil Producing Co. has derrick up and rig on location to deepen No. 1 Bledsoe, Section 20-15-7, Ashley County, abandoned as a dry hole at 2,554 feet.

**Further Drilling Planned**

Although the well in which they had an interest was abandoned a week or two ago, Shell Petroleum Corp. and Phillips Petroleum Co. are reported planning further drilling on their blocks in the Moro Bay district of Calhoun County, east of Champagnolle.

Ohio Oil Co.'s No. 1 Jerome, Section 13-15-4, Drew County, found the Nacatoch at 3,152 feet and is drilling sandy lime at 3,252 feet. Arkansas Natural Gas Corp.'s No. 1 Parks, Section 26-8-24, Logan County, about 15 miles southwest of its Johnson County gas production, was abandoned at 4,600 feet, corrected depth, the deepest of the dozen or so tests they have drilled in their northwest Arkansas explorations.

Flaucher and others' No. 1 Buck, Section 7-15-17, Ouachita County, 2 miles northeast of production in the Mount Holly district, was dry on drill stem test in the Nacatoch at 1,790-92 feet and now has a fishing job on its hands, total depth 2,235 feet. Lion Oil Refining Co. got its No. 1 Stowe, Section 4-17-13, Union County, under way and its progress will be watched until completion as it is less than 2 miles east of production in Champagnolle. J. W. Olvey and others cored a water sand at 2,530 feet on No. 1 Cottrell, Section 22-19-17, Union County, 10 miles northwest of Junction City.

**Leasing Active in Mississippi**

Leasing and geophysical work in Mississippi, particularly in the Meridian and Jackson districts, continues active. Gulf Refining Co., in addition to its already large holdings, has taken 2,100 acres more in the Meridian district after checking with torsion balance a magnetometer high centering in Sections 3, 4, 9 and 10-7-17, and is expected to make location for the first well in Section 2 or 3-7-17. It has also added 5,000 acres to its holdings in the Jackson district along the west side of Townships 7 and 8, Range 4; east side of Townships 7 and 8, Range 3, and the south side of Township 8, Ranges 2, 3 and 4, on five-year commercial leases.

H. P. Lee has turned over to the Sun Oil Co. 25,000 acres centering around the corner of Madison and Hinds Counties and to the Amerada Petroleum Corp. 1,000 acres in Townships 7 and 8, Range 1w. Pure Oil Co. also is adding to its holdings in that locality, having taken 8,000 acres or more, all told, at Jackson and north and northeast of the town. O'Brien Brothers of Shreveport and B. B. Jones of Tulsa are on a trade for 9,000 acres in the south half of Township 7, Range 1w, offering a well as consideration but have not closed with the land owners. Gulf Refining Co. has three torsion balance crews at work on the east side of the Jackson structure and Shell Petroleum Co. has two crews in the same territory.

**NORTH LOUISIANA**
**Bossier Parish**

Corbett and others are cleaning out No. 1 Murff, Section 18-17-11, preparatory to drilling deeper from 915 feet, former total depth. Nell & Lanier's No. 1 Biedenharn, Section 23-21-14, is shut down at 790 feet. Walker and others pulled 6-inch cemented at 2,880 feet on No. 1 Antrim, Section 28-22-13, and reset it at 3,019 feet; former total depth 2,985 feet.

**Caddo Parish**

Nemours Corp.'s No. 1 Ellerbe, Section 18-15-12, is drilling at 1,120 feet and The Texas Company made location for No. 2 School fee, 1,320 feet north and east SW cor. Section 16-15-12. Roo Refineries, Inc., has derrick up for No. 1 Liebman, 333 feet north and west SE cor. NE NE, Section 12-19-15. Lide & Davidson have derrick up for No. 1 Glassell, 300 feet south and west NE cor. SW SW, Section 1-19-15.

**DeSoto Parish**

P. J. Becker claims a gas show at 1,360 feet in No. 1 Tull, Section 23-12-15, and has shut down to cure title. Benedum & Trees' No. 1 Nicholson, Section 2-15-14, is drilling at 2,910 feet. Luke Case's No. 1 Boatright, Section 3-10-13, was dry on testing a show of oil and gas at 3,045 feet and is drilling deeper. Magnolia Petroleum Co. has the rig up to drill No. 1 Clements, Section 28-12-11, and R. O. Roy's No. 1 Sample, Section 1-13-14, is reaming to bottom after a dry test at 2,904 feet, total depth 2,923 feet.

**Grant Parish**

Carter & Collins' No. 1 Hardtner Tannehill, Section 9-6-1w, is shut down at 1,570 feet.

**Lincoln Parish**

V. E. Shaw's No. 1 Voss, Section 1-23, tested salt water at 2,480 feet.

**Monroe District**

Morehouse Parish—Woodley & Collins No. 1 Harp, Section 22-22-7, tested salt water at 2,864 feet in 13 feet of sand and is drilling red shale at 2,874 feet.

Ouachita Parish—Phillips and others No. 1 School, Section 16-16-4, is drilling at 3,462 feet.

Union Parish—The Texas Company has derrick up for No. 1 F. M. Fuller, 1,020 feet east and 300 feet north SW cor. NW, Section 9-21-2w.

**Natchitoches Parish**

S. D. McDaniel's No. 2 Clark-Morse, Section 23-5-6, was dry at 2,431 feet and showed for 1,000,000 feet of gas with salt water in 8 feet of sand, total depth 2,536 feet. Robeline Oil & Gas Co.'s No. 1 Cassady, Section 7-8-9, is in lime at 2,905 feet.

**Red River Parish**

Eylers Oil Co. has rig up to drill No. 1 Chaffraix, 220 feet south and west NE cor. NE SW, Section 30-12-10.

**Richland Parish**

Austin & McDonald began drilling No. 2 Millsaps, Section 17-17-6, April 2, and are down 1,722 feet. Northern Louisiana Natural Gas Co. has rig up to drill No. 1 Hempler, Section 11-16-6.

**Sabine Parish**

R. L. Gay's No. 2 Bowman-Hick, Section 14-7-14, is in lime at 3,166 feet. No. 3 set 10-inch at 85 feet and is drilling at 340 feet and No. 1 Sabine Lumber Co., Section 13-7-14, is temporarily abandoned at 2,936 feet. A. H. Tarver has rig up to drill No. 1 Long-Bell, Section 29-8-13.

**EAST TEXAS**

Shelby County—Gulf Refining Co. No. 1 Carraway, J. H. Patterson Survey, is drilling gray lime with streaks of black shale at 3,725 feet.

**ARKANSAS**
**Ashley County**

Atlantic Oil Producing Co. is building a new derrick on No. 1 Bledsoe, Section 20-15-7, preparatory to drilling deeper from 2,554 feet. J. G. Marcum's No. 1 DeYampert, Section 5-19-4, is washing on bottom, total depth 3,310 feet.

**Columbia County**

Helena Oil & Gas Co. is drilling No. 1 Pickler, Section 19-19-22, in lime at 2,280 feet.

**Drew County**

Ohio Oil Co.'s No. 1 Jerome Lumber Co., Section 13-15-4, is drilling at 3,0[illegible] feet.

**Ouachita County**

Flaucher and others' No. 1 Buck, Section 7-15-17, was dry on drill stem test from 1,790-92 feet in the Nacatoch, a

is fishing for drill stem; total depth 2,235 feet. Louisiana Oil Refining Corp.'s No. 1 Manly, Section 15-15-19, is drilling at 3,251 feet. Timberlake and others' No. 1 Wright, Section 25-14-18, is drilling at 1,800 feet. Wesson and others set 40 feet of 10-inch on No. 1 Booth, Section 12-15-19.

**Logan County**

Arkansas Natural Gas Corp. is drilling sand at 2,125 feet on No. 1 Hanna, Section 26-7-23.

**Union County**

Hawthorne Oil Co. is drilling No. 1 Smith, Section 8-16-17, at 2,292 feet. Lion Oil Refining Corp. is drilling No. 1 Stowe, Section 4-17-13, at 150 feet. McDonald Brothers' No. 1 Mayfield, Section 29-19-15, is shut down repairing the pot, total depth 2,160 feet. J. O. Moore, trustee, is coring No. 1 Union Sawmill, Section 11-18-12, at 2,643 feet. J. W. Olvey cored salt water sand at 2,530 feet on No. 1 Cottrell, Section 22-19-17, and is coring again at 2,540 feet. Sundby and others are drilling No. 1 Yocum, Section 29-16-17, at 2,100 feet.

**MISSISSIPPI**

Monroe County—Arkansas Natural Gas Corp. is drilling No. 1 Rye, Section 22-15-17, in lime at 3,080 feet.

**WEST TENNESSEE**

Decatur County—Standard Oil Co.'s No. 1 Wyatt, 7 miles south of Decatursville, is drilling hard gray lime at 1,170 feet.

## SOUTHWEST TEXAS

(Continued from Page 49)

H. Martin Survey, has been abandoned at 4,050 feet.

**Nueces County**

Southern Crude Oil Purchasing Co.'s No. 1 Roy Clift, Section 197, has been abandoned at 3,009 feet.

**Refugio County**

Magnolia Petroleum Co.'s No. 1 Glenewinkle, J. Scott Survey, has been abandoned at 3,350 feet.

**Duval County**

W. F. Morgan's No. 1 Welder-Woods, Survey 102, has been abandoned at 2,367 feet.

**Webb County**

O. W. Killam's No. 8 Bruni, Survey Block 9, has been abandoned dry at 1,464 feet, sand at 1,382-87 feet testing gas.

### NEW LOCATIONS MADE

**Bastrop County**

The Texas Company's No. 5 Yoast, A. Garcia Survey, 300 feet east of No. 4 is drilling.

**Bexar County**

W. H. Kennon's No. 2 fee, Survey 4, located 1,500 feet north, 15 degrees east of No. 1 is location.

F. H. Eckert's No. 4 Dobrowolski, Section 52, Block 4, located 450 feet south line, 150 feet east line, is drilling at 250 feet.

Schimmel Production Co.'s No. 2 H. F. Gayle, C.E.P.I.&M. Survey, Block 2, is location 350 feet north line, 150 feet east line.

**Caldwell County**

Shell Petroleum Corp.'s No. B-3 Robert Carter, Gerren Hinds Survey, is drilling at 2,398 feet in chalk.

Morgan Brothers' No. 1 Malone, A. Boyd Survey, is in Buda at 2,605 feet reaming out hole.

Herbert Morgan and others' No. 1 Caldwell County land, James Hinds Survey, is location.

Humble Oil & Refining Co.'s No. B-3 Miller, James Hinds Survey, is location 330 feet NW cor.

Humble Oil & Refining Co.'s No. 1 Tom Tiller, James Hinds, Survey, is rigging up with rotary.

Humble Oil & Refining Co.'s No. 1 Northcutt, James Hinds Survey, has derrick up.

Humble Oil & Refining Co.'s No. A-8 Moses & Baggett, Gerren Hinds Survey, has derrick up.

Humble Oil & Refining Co.'s No. 4 L. A. Hanson, James Hinds Survey, is building derrick.

Humble Oil & Refining Co.'s No. 1 Crap Briscoe, is building derrick.

Gulf Production Co.'s No. 8 J. D. Wright, Gerren Hinds Survey, is building derrick.

Gulf Production Co.'s No. 12 Carter, Gerren Hinds Survey, is rigged up with rotary.

Gulf Production Co.'s No. 11 Carter, Gerren Hinds Survey, is drilling at 790 feet in shale and boulders.

Gulf Production Co.'s No. 10 Carter, Gerren Hinds Survey, is rigging up with rotary.

Forest Oil Co.'s No. 1 Bridges has set 10-inch surface casing at 43 feet.

**Duval County**

Humble Oil & Refining Co.'s No. 22 Kohler, Survey 395, located 495 feet west line 165 feet north line, is rigging up.

Magnolia Petroleum Co.'s No. B-6 Hahl, Survey 61, located 3,450 feet east line, 600 feet south line, is rigging up.

G. M. Partee's No. 2 Moody, Survey 60, located 450 feet west line, 150 feet north line, has derrick up.

**Jim Hogg County**

Alworth-Stevens-Hild's No. 16 Alworth, Survey 40, Block 14, located 150 feet northeast lines, 660 feet southeast lines, is rigging up.

**Medina County**

T. N. T. Drilling Co.'s No. 1 A. Bendele, Survey 470, is location 150 feet west line, 500 feet south line.

**Nueces County**

F. P. Zoch and Texas Production Co.'s No. 1 is rigging up 8 miles north of Agua Dulce.

**Refugio County**

Saxet Gas Co.'s No. 7 Claude Heard has been spudded in and is drilling.

Houston Gulf Gas Co.'s No. 2 Rose Lambert has cemented casing at 3,646.

**Webb County**

R. O. Barnsley's No. 1 Barnsley, Survey 268, Block 15, is location 581 feet south line, 150 feet east line.

The Texas Company's No. 2 Benavides, Survey 683, located 1,000 feet east line, 150 feet north line, is drilling at 1,000 feet.

William F. Morgan's No. 3 King-Harper, Survey 323, is coring for sand below 1,700 feet.

Trapshooter Reilly Oil & Royalties Co.'s No. 1 Benavides, NE NW Survey 685, located 150 feet north and east lines, is location.

**Humble Field—Duval**

Humble Oil & Refining Co.'s No. 15 Kohler, Survey 401, located 825 feet east line, 165 feet north line, has set 10-inch casing at 269 feet; No. 16 Kohler, Survey 144, located 225 feet south line, 165 feet west line, is location; No. 17 Kohler, Survey 399, located 165 feet north and west lines, is drilling at 2,481 feet; No. 18 Kohler, Survey 402, located 165 feet south and east lines, is drilling at 1,485 feet; No. 20 Kohler, Survey 251, is location 165 feet north line, 2,475 feet east line; No. 21 Kohler, Survey 396, located 545 feet east line, 495 feet north line, is drilling at 1,314 feet.

**Driscoll Field**

Robert Driscoll's No. 15 Driscoll, Survey 448, is drilling at 1,850 feet.

**Schoolfield & O'Byrne Pool**

G. M. Partee's No. 1 Moody, Survey 60, located 150 feet north and west lines, has set casing at 2,341 feet, sand at 2,349-54 feet. Sun Oil Co.'s No. 3 Norton, Survey 250, Block 19, located 750 feet east line, 150 feet north line, is coring at 2,344 feet. S. & O. Oil Co.'s No. B-3 J. Bowe, Survey 250, Block 21, located in northwest corner, is drilling at 1,600 feet.

**Randado Field—Jim Hogg**

Magnolia Petroleum Co.'s No. 41 Merchants State Bank, Survey 155, located 150 feet north and east lines, is at 4,910 feet with 1,980 feet of pipe stuck in hole while coming out caused by boulder falling in. Randado Oil Corp.'s No. 35 Palacious, Survey 291, Block 2, located 150 feet south line, 450 feet east line, is standing at 100 feet.

**Henne-Winch & Fariss Pool**

A. L. Kitselman's No. 1 Lopez, Survey 255, Block 6, located 289 feet north line, 300 feet west line, is drilling at 2,890 feet. The Texas Company's No. 2 Vela, Survey 589 is location.

**Schott Field—Webb**

Livingston & Payne's No. 1 Guerra-

# HOUGH
## EXTENSION
## LOWER VALVE

**The popularity of the HOUGH EXTENSION LOWER VALVE isn't based on price alone; it isn't based on the fact that every good dealer carries them in stock; it isn't based on the fact the unit is simple and sturdy; it isn't based on the fact the unit is mechanically perfect; that popularity isn't entirely due to the fact that the Valve is fitted with oversize Steelex Ball and Seat—that it fits any make of working barrel or that it stands up efficiently over a long period. The real, stable popularity of the HOUGH EXTENSION LOWER VALVE is due to a combination of these facts—and if you investigate you'll agree that it cannot be beaten for design, workmanship and performance.**

THE CHARLES N. HOUGH MFG. CO.
Franklin, Penna.

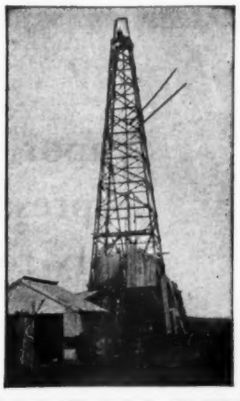
C. O. SHUMAKER
Sales Representative
1143 South Xanthus St.,
Tulsa, Okla.

C. R. BROOKS
Sales Representative
1632 West Humboldt St.,
Fort Worth, Texas

*Products That Cut Down Your Underground Overhead*

***Why Experiment? Washington Derricks Will Drill Your Wells and Pull Your Casing***

The inside construction of a joint in a Washington Derrick. The inside and outside reinforcing plates form a slot to receive the next higher leg.



Outside joint of a Washington Derrick. The slot formed by the two plates holds the legs in place, while bolting up, thus making fast erection easy.

# WASHINGTON DERRICKS

***Substantial and Safe in Any Field***

**Scientifically designed to meet the tremendous stresses and strains in drilling, there is no uncertainty about what Washington Derricks can do. Two dozen deep wells with a single Washington is not unusual service for these rigs. They are as permanent as it is possible to make them. Rugged, fireproof, windproof, easily erected and dismantled.**

**A Washington Derrick isn't cheap—but it is THE economical derrick from the time you buy it until the last well it's used on.**

**O'Brien Steel Construction Company, Inc.**
**Washington, Penna.**

*Western Representative:*
RIG EQUIPMENT COMPANY, 1524 So. St. Louis St., Tulsa, Okla.

# Vapor Phase Refining

**Our licensees, in more than thirty refineries, are proving the validity of our claims to their own satisfaction and profit.**

**You too can decrease your treating losses and improve the quality of your cracked gasoline—at the same time reducing your costs.**

-o- -o- -o- -o-

**Vapor phase cracked products, as well as pressure distillates, are being successfully refined.**

## The Gray Processes Corporation

961-975 Frelinghuysen Avenue

Newark, New Jersey

Ochoa, Survey 58, located 917 feet east line, 470 feet south line, is ready to spud in. Laredo Oil Co.'s No. 14 Killam, Survey 457, located 350 feet west line, 475 feet south line, has sand at 1,648-50 feet.

**Albercas Field**

Sun Oil Co.'s No. A-12 Yeager-Strohman, Share 5, located 4,675 feet north line, 150 feet west line, is standing at 2,153-55 feet in sand. Rycade Oil Corp.'s No. 8 Yeager-Strohman, Share 5, located 1,950 feet north line, 150 feet west line, is standing at 2,145 feet.

**Aviator Field**

Aviator Gas Co.'s No. 2 Bruni, Survey 2,083, is location 1,120 feet east line, 1,170 feet south line. G. C. Salley's No. 1 Puig, Carter-Pinkton tract, 220 feet west line, 150 feet south line, has sand at 1,608-09 feet.

**Carolina-Texas Field**

A. G. Deckle's (Miller-Daniels) No. 1 de la Garza, Survey 48, Block 47, located 150 feet north and east lines, is standing at 2,709 feet. W. R. Shankel's No. 1 Webster, NE SE Survey 684, located 150 feet south and west lines, is testing at 3,030 feet.

**Magnolia-Cole Field**

Cole Petroleum Co.'s No. 67 Benavides, Survey 412, Block 12, located 313 feet east line, 160 feet north line, is standing at 38 feet. Houston Oil Co.'s No. D-4 Benavides, Survey 753, Block 13, is location 160 feet south line, 822.5 feet east line; No. D-17 Benavides, Survey 753, Block 5, is location 160 feet to south and west lines. Magnolia Petroleum Co.'s No. 1 King-Benavides, Survey 694, Block 12, located 150 feet south and east lines, is drilling at 1,860 feet; No. 1 J. D. Valdez, Survey 754, Block 15, is location 150 feet south and west lines.

**Simms Field**

Houston Oil Co.'s No. 1 Dinn, Survey 666, located 1,172 feet north line, 160 feet east line, is moving on. Simms Oil Co.'s No. 4 Dinn, Survey 666, located 360 feet south line, 150 feet east line, has sand at 1,742-43 feet and set casing.

**Cole Gas Field**

O. W. Killam's No. 4 (1) Bruni, Survey 5, Block 2, located 150 feet northwest lines, 86 feet southwest lines, is drilling at 1,750 feet; No. 8 Bruni, Survey 3, Block 9, has sand at 1,382-87 feet and set casing at 1,376 feet.

**Jennings or Cuellar Field—Zapata**

Trapshooter Reilly Oil & Royalties Co.'s No. 2 Hinnant, Survey 74, located 757 feet east line, 1,170 feet south line, is drilling at 500 feet. T. P. Morgan's No. 1 Hinnant, Survey 74, is drilling at 1,000 feet. O. W. Killam's No. 13 Cuellar is at 1,400 feet coring for sand. South Texas Production Co.'s No. A-4 Jennings, Cerrito Blanco Grant, 8,250 feet southwest lines, 6,825 feet southeast lines, is drilling at 1,050 feet.

**Somerset Field—Atascosa**

W. R. Hamilton's No. 16 R. T. Hughes, Survey 518, J. Sharp, is location, west central part of lease.

**Yoast Field—Bastrop**

Atlantic Oil Producing Co.'s No. 5 Yoast, A. Garcia Survey, 300 feet east of No. 4, is drilling.

**Somerset Field—Bexar**

W. H. Kennon's No. 14 fee, M. F. Rodriguez Survey No. 4, located 470 feet north of No. 10, is getting ready to spud in. Schimmel Production Corp.'s No. 1 H. F. Gayle, C.E.P.I.&M. Block 2, is location 250 feet west line, 895 feet south line; No. 1 J. Frees, same survey and block, is location 250 feet east line, 329 feet south line; No. 2 J. Frees, same survey and block, is location 679 feet north of No. 1.

**Joe Bruner Field—Caldwell**

Tips de Armond's No. 2 Carter, Gerren Hinds Survey, 170 feet west line, 347 feet north line, is drilling at 1,005 feet showing some gas. Buchanan and others' No. 1 Trap-Briscoe, P. B. McCearly Survey, 150 feet south and east lines, is drilling at 2,626 feet. E. R. Brawn & C. O. Miller's No. 2 R. W. Carter, Gerren Hinds Survey, 150 feet north and west lines, has derrick up.

Forest Oil Co.'s No. 1 J. H. Fleming, A. Floyd Survey, 150 feet northeast lines, 75 feet southeast lines, at 2,748 feet is waiting on pump. Golden West Oil Co.'s No. 3 Malone, A. Floyd Survey, 450 feet northwest lines and northeast lines, at 2,690 feet has 1,800 feet of fluid in hole after shooting at 2,410 feet with 130 quarts of nitro. Gulf Production Co.'s No. 9 R. W. Carter, Gerren Hinds Survey, 300 feet east of No. 8, is at 2,685 feet preparing to pump; No. 9 W. L. Smith, A. Floyd Survey, 150 feet SW cor., is drilling at 2,694 feet in Edwards.

No. 6 J. D. Wright, Gerren Hinds Survey, 150 feet NW cor., is at 2,022 feet in hard shale; No. 7 J. D. Wright, Gerren Hinds Survey, is drilling at 2,672 feet in top of Edwards. T. C. Hadley's No. 1 Merriweather, A. Floyd Survey, 119 feet north line, 150 feet east line, is drilling out plug; No. 1 J. M. Hanson, James Hinds Survey, 150 feet south and east lines, is location. Humble Oil & Refining Co.'s No. 7 W. O. Allen, is in Edwards at 2,773 feet swabbing; No. 1 Martha Briscoe, James Hinds Survey, 150 feet SW cor., is swabbing at 2,710 feet in Edwards; No. 2 Martha Briscoe, James Hinds Survey, 207 feet north line, 150 feet west line, has set casing at 2,671 feet, total depth 2,702 feet.

No. 1 L. G. Hanson, James Hinds Survey, 450 feet south line, 750 feet east line, is setting and cementing casing, total depth 2,710 feet; No. 2 L. G. Hanson, James Hinds Survey, 150 feet SW cor., is at 2,717 feet waiting on cement; No. 3 L. G. Hanson, James Hinds Survey, 440 feet south line, 150 feet east line, is at 2,716 feet waiting on cement to set casing at 2,709 feet; No. 1 B. Johnson, James Hinds Survey, 350 feet north and east lines, is drilling at 2,678 feet in Edwards; No. A-4 Moses & Baggett, 300 feet west of No. 1 is drilling at 2,290 feet in Taylor marl.

No. B-3 Moses & Baggett, Samuel Shupe Survey, 150 feet east line, 1,050 feet south line, has derrick up; No. B-4 Moses & Baggett, has derrick up, 1,350 feet south line, 150 feet east line; No. B-5 Moses & Baggett, 150 feet east line, 450 feet north line, is at 2,686 feet total depth, casing set at 2,676 feet; No. 1 Clyant Smith, 150 feet NE cor., is drilling at 2,275 feet in chalk; No. 7 J. B. Tiller, Gerren Hinds Survey, 450 feet west line, 150 feet south line, is drilling at 2,729 feet; No. A-1 J. R. Tiller, James Hinds Survey, 150 feet west line, 1,050 feet south line, has derrick up.

No. A-2 J. R. Tiller, 300 feet north of A-1, has derrick up; No. B-1 J. R. Tiller, 150 feet west line, 1,050 feet south line, has derrick up; No. B-2 J. R. Tiller, 150 feet east of road, 219 feet north line, has derrick up; No. C-1 J. R. Tiller, 207 feet south line, 150 feet west line, is drilling at 2,684 feet; No. 2 J. D. Wright, Gerren Hinds Survey, 150 feet west line, 450 feet north line, is drilling at 2,675 feet in Georgetown. Luling Oil & Gas Co.'s No. 1 G. R. Carter, Gerren Hinds Survey, 150 feet north and west lines, is drilling at 2,198 feet in Taylor marl.

Lutex Oil, Inc.'s No. 4 Joseph Wilson, A. Floyd Survey, 150 feet west line, 450 feet north line, is at 2,690 feet set liner and rigging up to pump. Morgan-Duke's No. 2 Cora Malone, A. Floyd Survey, 300 feet southwest of No. 1 is partially rigged up. Shell Petroleum Corp.'s No. 6 Cora Malone, A. Floyd Survey, is at 2,688 feet bailing water; No. 1 New, James Hinds Survey, 150 feet south and west lines, at 2,733 feet in Edwards, casing set at 2,710 feet; No. 2 New, James Hinds Survey, 340 feet north of No. 1, is at 2,723 feet in Edwards setting casing; No. 4 New, James Hinds Survey, 340 feet north of No. 3, is setting surface casing; No. 1 W. L. Smith, A. Floyd Survey, 150 feet north and west lines, is at 2,696 feet drilling out plug; No. 2 F. Tiller, Gerren Hinds Survey, 450 feet east line, 150 feet north line, is at 55 feet moving in rotary.

No. 8 F. Tiller, Gerren Hinds Survey, 300 feet west of No. 6, is at 2,695 feet setting casing at 2,679 feet; No. 6 R. W. Malone, A. Floyd Survey, is location 700 feet south and east lines. The Texas Company's No. 1 R. W. Carter, Gerren Hinds Survey, 150 feet south and east lines, is at 2,680 feet in Edwards reaming to set casing at 2,670 feet. Turman & Brown's No. 1 Beversdorff, A. Floyd Survey, is location 150 feet southeast lines, 131 feet southwest lines.

**Dale Field**

The Texas Company's No. 2 Jeff Moore, J. Gilbert Survey, 600 feet northwest lines, 1,600 feet southwest lines, is drilling at 1,400 feet in shale.

**Luling Field—Caldwell**

United North & South Development Co.'s No. 1 G. C. Gideon, Miles Dykes Survey, 880 feet north line, 320 feet west line, is drilling at 3,200 feet.

**Sullivan Field—Gonzales**

Benedum & Trees' No. 1 J. E. Lamkin estate, Winslow Turner Survey, is drilling at 3,000 feet. Empire Gas & Fuel Co.'s No. 2 Norwood, Winslow Turner Survey, 600 feet northwest of No. 1, is drilling at 2,600 feet.

**Kingsville Field—Kleberg**

Humble Oil & Refining Co.'s No. B-5 Dennett, Survey 38, Block 19, located 400 feet north of No. 1, is drilling at 1,375 feet; No. 4 Flato, Section 40, Block 10, located 250 feet east line, 450 feet north line, is drilling at 5,507 feet.

**Agua Dulce Field—Nueces**

Agua Dulce Oil & Gas Co.'s No. 1 Otto Wolters, Section 34, Benton's Pasture, is at 2,047 feet showing sulphur water and standing. R. & G. Corp.'s No. 1 Brown, George H. Paul Subdivision, Section 87, is location; No. 1 Perkins, W. W. Wright Survey, 150 feet west line, 1,920 feet south line, at 3,050 feet got stem out and started drilling again; No. 2 Ed Allen, Lot 5, Section 6, about 1,900 feet east of No. 1, has derrick up.

**Refugio Gas Field—Refugio**

Benedum & Trees' No. 4 Claude Heard, 600 feet south of No. 3, is rigging up. Houston Oil Co.'s No. 10 Rooke, at 3,680 feet has sand showing oil. Houston Gulf Gas Co.'s No. 1 J. F. B. Heard, 150 feet south of river, is moving in rig, derrick up; No. 7 Shelly is drilling at 1,800 feet; No. 1 L. M. Rogers, J. Powers Survey, 233 feet east line, 606 feet south line, at 3,685 feet is building tanks preparatory to drilling in test showing oil; No. 2 Rooke, 700 feet north of No. 1, is at 86 feet with a strong flow of water and some gas; No. 8 James Agnes Lambert is at 3,636 feet with gas sand and has set casing.

No. 7 Fannie Heard is at 3,680 feet and set casing to test; No. 4 J. M. O'Brien, Survey 4, south central part, at 2,500 feet total depth, sidetracked at about 800 feet and is shut down at about old depth. Mission Drilling Co.'s No. 1 J. E. Fox heirs has spudded in; No. 3 Rogers estate, 1,250 feet west of No. 2, is at 3,680 feet in sand showing gas and oil and is preparing to complete. Oigufer Oil Co.'s No. 1 Ryals, townsite tracts, is at 3,670 feet setting casing, waiting on cement. Refugio Development Co.'s No. 1 City of Refugio, street lease, is drilling at 2,450 feet.

**White Point—San Patricio**

Spencer & Rhoades' No. 2 J. M. Bennett, A. S. Taft Survey, 900 feet west line, 400 feet south line, at 2,290 feet tested dry and is drilling deeper.

**West Area—Zavala**

Tritex Oil Co.'s No. 4 West is drilling at 480 feet; No. 6 West is down 520 feet.

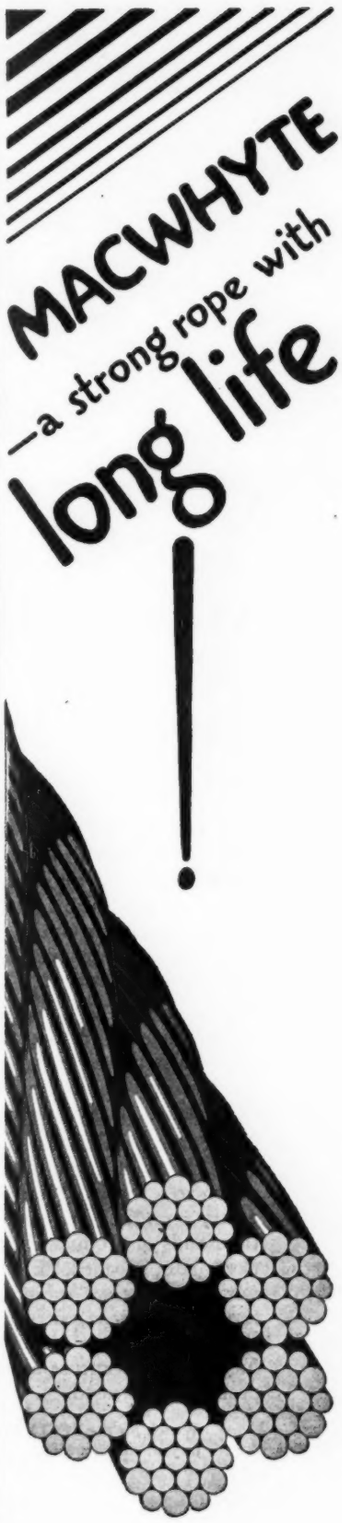
## CANADIAN FIELDS

(Continued from Page 53)

in production only part of the month, or were bailed while drilling.

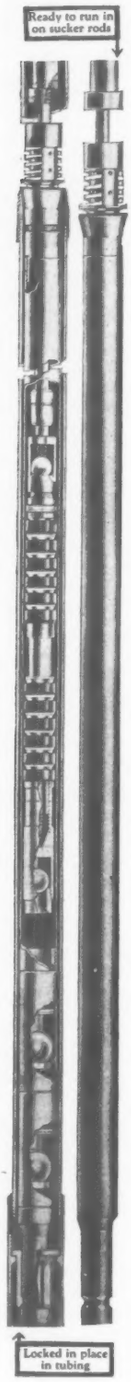
**Royalite No. 14 Big Producer**

The outstanding feature of recent development has been the coming in of Royalite's No. 14 LSD 4, Section 7-20-2w5. This test is in the same section as Royalite's No. 4 gusher, but at a somewhat higher point on the structure, having got the top of the lime at a new high point of 3,220 feet. Considerable delay has been caused owing to drilling difficulties after entering the lime. When No. 14 got the lime at a new high, many operators looked for big production, especially as the show of wet gas met in the top of the lime was unusually large. An increased flow was met around 300 feet in the lime, and at 3,640 feet the well blew into big production. The initial measurement showed 13,000,000 feet a day, but




*Write for location of stocks*

**Macwhyte Company**
**2916 Fourteenth Avenue**
**Kenosha, Wisconsin**




# To make your wells produce *more dollars*

**The overwhelming success of the EPCO Pump throughout the country has brought into being a vast organization . . . . which is now the recognized leader in the pumping industry.**

There is an EPCO Pump expert in every major producing district, ready to serve your needs and help you participate in increased profits now being enjoyed by EPCO users throughout the world.

PERFORMANCE alone could possibly cause the phenomenal rise of this organization to a foremost position in the industry . . . PERFORMANCE which, as thousands of producers will testify, has never been equalled, PERFORMANCE which means that "tubing-jobs" are practically eliminated, rod troubles are minimized, maximum production is obtained, fuel and labor expense cut down, and net profits are increased.

*Watch for the* EPCO *service man in your district. He can help you.*

"Economy is Right"

**The Economy Pump & Oil Tool Co.**

*Offices and Factory:* 4424 E. 49th St., Los Angeles, Calif., U. S. A. *Office and Warehouse:* Ft. Worth, Texas. *Representatives* at Tulsa, Bristow, Ponca City, Duncan and Seminole, Oklahoma; Fort Worth, Beaumont, Mexia and Wichita Falls, Texas; Shreveport, Louisiana; El Dorado, Arkansas; also Representatives and distributing points at Long Beach, Huntington Beach, Santa Fe Springs, Taft and Bakersfield, California, or any National Supply Company Store throughout the world.

DISTRIBUTED BY
THE NATIONAL SUPPLY COMPANIES


this flow increased considerably in the first 24 hours.

The coming in of the well cost the lives of two members of the drilling crew, M. A. McRae and A. E. Yea. These men, with Sam G. Coultis, were in charge when the well blew in. A big gas flow had been struck about 7 p.m. but drilling was continued until the pressure became too strong. The drilling rods were then withdrawn, but when about 600 feet remained in the hole the pressure shot the rods up through the derrick. The six men working in the rig all ran, but McRae and Yea were crushed by the falling rods. Both died a few hours after being removed to the hospital. McRae had worked as a driller for about eight years, and was about to take over supervision of the well when the accident occurred. Yea had come to the field a week previous looking for day labor, and was assisting as an emergency worker. A coroner's jury pronounced their deaths purely accidental.

Production of Royalite's No. 14 is reported to have reached a maximum of around 30,000,000 feet, putting it in a class with Royalite's No. 4. Later this production became partially choked off, and at last reports the test was being cleaned out and deepened.

Royalite's No. 8, LSD 15, Section 12-20-3w5, a deep lime producer at 3,753 feet, which has been choked off with a length of drill pipe in the hole, has come back into production, making around 15,000,000 feet a day, with a potential crude naphtha recovery around 225 bbls.

Royalite's No. 12, LSD 3 ,Section 13-20-3w5, is at 3,840 feet and drilling past lost bit. Royalite's No. 16, LSD 2, Section 12-20-3w5, is at 5,060 feet and circulating mud preparatory to drilling deeper. A production test failed to develop satisfactorily. Royalite's No. 19, LSD 5, Section 6-20-2w5, is drilling at 4,145 feet, LSD 7, Section 12-20-3w5, is drilling at 3,189 feet. Royalite's No. 21 is at 3,473 feet and with 10-inch casing lowered to 1,208. Royalite's No. 23, NW Section 31-19-2w5, is drilling at 1,606 feet.

Foothills' Oil & Gas Co.'s No. 2, LSD 8, Section 1-20-3w5, is drilling at 3,915. Foothills' No. 3, LSD 16, Section 8-19-2w5, is drilling at 1,527 feet.

### Home Oil Wells

Home Oil Co.'s No. 2, LSD 14, Section 20-19-2w5, has 4½-inch casing cemented in the top of the lime at 5,353 feet, and is almost ready to resume drilling. Home's No. 3, same LSD, got the top of the lime at 5,032 feet, about 70 feet shallower than No. 1 and 200 feet shallower than No. 2. No. 3 is cementing casing in top of the lime after a small fishing job. Home's No. 4, Section 20-19-2w5, is drilling on a lost underreamer lug at 2,830 feet.

Northwest-Associated's No. 1, LSD 6, Section 20-19-2w5, is drilling at 4,632 feet.

Rigs are being erected at three new tests to be handled by Imperial Oil, Ltd. These are Dalhousie Oil Co.'s No. 7, Royalite Oil Co.'s No. 25 and Foothills Oil & Gas Co.'s No. 4. Dalhousie's No. 7 is in LSD 11, Section 18-20-2w5, not far from No. 1. Royalite's No. 25 is in LSD 8, Section 17-19-2w5, in the south end of the field. Foothills' No. 4 is in LSD 1, Section 26-20-3w5.

Spooner Oils' No. 2, Section 24-20-3w5, is drilling in a very hard formation 95 feet in the lime at 5,165 feet depth, with a slightly increased gas production. This is getting close to the big producing horizon. Calmont Oils' No. 1 is again being cleaned out, limestone cavings resulting from the recent shots having plugged the hole for about 20 feet. The hole is down 5,665 feet and near the lime production. New McDougall-Segur Oil Co.'s No. 2, LSD 14, Section 12-20-3w5, is drilling 100 feet in the lime at 5,158 feet and making around 3,000,000 feet of wet gas. Drill is working in a hard cap rock and is thought to be close to the big production. Illinois-Alberta Oils' No. 2, same LSD, diamond drill test, is at 3,620 feet and drilling through cement used to shut off gas pressure. At this depth the test is in the top of the lime.

Okalta Oils' No. 1, LSD 1, Section 1-20-3w5, is being got under control and connected with the separators to secure complete naphtha recovery. The well has been blowing around 35,000,000 feet a day, with crude naphtha recovery of between 500 and 600 bbls., but has been fishing for damaged casing. Okalta's No. 2, LSD 8, Section 1-20-3w5, which has been producing crude oil from 3,1[illegible] feet depth, will be carried to the deep lime, deepening to start in the immediate future. Okalta's No. 3, LSD 9, same section, is resuming drilling at 2,300 feet after cementing back from 2,500 feet to overcome a crooked hole. William Elder, a pioneer driller of the Turner Valley Field and associated with W. S. Herron in the old Herron-Elder Oil Co. some years ago, has taken over the duties of field superintendent for Okalta Oils, Ltd.

Regent Oil Co.'s No. 1, LSD 16, Section 1-20-3w5, which got some deep lime production at 3,843 feet, has been deepened to around 3,868 feet, increasing the flow to around 105 bbls. a day. Drilling will be continued with three shifts.

McLeod Oil Co.'s No. 3, LSD 16, Section 1-20-3w5, at 4,871 feet has been given the first two of a series of small shots in an effort to dislodge lost drill rods. The well is being cleaned after each shot. McLeod's No. 4, same LSD, is maintaining a steady production of around 70 bbls. a day from the lower horizon in the deep lime at 4,970 feet. McLeod's No. 1 is producing around 1[illegible] bbls. a day from the first lime horizon at 3,915 feet. McLeod's No. 2, same LSD, which is about 700 feet in the lime at 4,363 feet, is cleaning the hole preparatory to drilling to the second lime horizon, where No. 4 got its lower production at 1,233 feet in the lime. This will be the second test in the Turner Valley Field to go to the lower lime horizon. At a recent meeting of directors of the McLeod Oil Co. the following officers were elected: President, R. [illegible] Hutchings; vice president, John I. McFarland; managing director, George Cloakey; secretary-treasurer, J. G. Elgar.

### Southern Turner Valley

In the southern end of the Turner Valley Field, East Crest Oil Co.'s No. 1, LSD 5-6, Section 16-19-2w5, got the top of the Dalhousie sand, in the Fernie shale horizon, at 3,785 feet, but has not gone sufficiently into the sand to determine whether it is productive at this point. The test is expected to get the deep lime around 4,300 feet.

### New Possibilities

United Oils' No. 4, LSD 2, Section 20-3w5, is at 5,385 feet, getting the hole in shape to resume drilling. The gas flow is between 2,000,000 and 3,000,000 feet a day, the well flowing by heads and making around 75 bbls. of crude from the Dalhousie sand. The drill has gone nearly halfway, about 40 feet, through this sand. This test will be continued to the lime, about 250 feet lower, about 500 feet of drilling being required to reach the main producing horizon in the lime. The location, on the east flank of the east Turner Valley fold, and toward the northeast section of the field, presents interesting new possibilities, though drilling is rather deeper than in the central section of the field.

### Deep Test in Wainwright

Hargal Oils of Vancouver is getting ready to start its No. 1 test in the Turner Valley. A deep test will at the same time be drilled on the old British Petroleums acreage in the Wainwright Field.

### Moose Mountain

In the Moose Mountain district, Sunnal Hill Oil Co.'s No. 2, LSD 9, Section 34-23-5w5, is drilling at 2,700 feet with good oil showings, but no commercial production.

### Skiff Field

In the Skiff Field, Imperial-Devenish No. 3, LSD 11, Section 11-5-14w5, has been deepened into the Ellis sand and is being given a production test at 3,0[illegible] feet. Oil rose steadily while drilling, and no water was indicated, and it was standing around 2,100 feet when the production test started. Unofficial reports claim a probable production of 250 bbls. a day of lighter crude than in No. 1 discovery well. Results at Devenish's No. 3 w[illegible]

determine operations by other companies which hold acreage on the Skiff structure and have made tentative locations.

In the Wainwright Field, east-central Alberta, Wainwell Oils' No. 1, LSD 9, Section 36-44-7w4, is being deepened and is practically on top of the second oil sand at 2,200 feet.

**Mystery Well**

The Fabyan "mystery" well, drilled several years ago by Imperial Oil, Ltd. on Gratton Oil Co. acreage, was opened recently after being shut in some four years. The well spouted a mixture of oil and water over the surrounding landscape, and showed evidence of strong gas pressure. At the time the well was drilled reports were widely circulated that Imperial Oil, Ltd. was covering up an important oil discovery; but shortly afterward the Imperial company handed back the leases and well to the Gratton interests. The latter in 1928 leased the acreage to Fabyan Petroleum, Ltd. which is planning further development, and is laying a gas line from the mystery well to serve consumers in the village of Fabyan.

## SOUTHWEST WILDCATS

(Continued from Page 49)

and 21, farther south in a gas area they have opened, are about ready to complete and each looks like a gas well.

**Brooks County**

W. G. French's (American Maracaibo) No. 1 Riley Allen, San Antonita grant, 8,416 feet west line, 14,722 feet north line, is drilling at 1,060 feet.

**Duval County**

W. F. Morgan's No. 1 Welder-Woods, Survey 102, located 2,725 feet east line, 75 feet south line, has sand and shale at 2,327 feet.

**Starr County**

Ohio Oil Co.'s No. 1 Bass, Porcion 76, Block 71, has been spudded in. U. S. Oil & Gas Co.'s No. 1 Kelsey, Porcion 76, Block 11, located 1,500 feet north line, 500 feet west line, is drilling at 450 feet. The Texas Company's No. 1 V. C. de Guerra, Porcion 68, Share 92, located 600 feet east line, 6,280 feet south line, is drilling at 900 feet.

**Webb County**

G. S. Lumkin's No. 1 H. Yeager, Porcion 33-34-35, Block 17, located 1,170 feet east line, 150 feet south line, is location. L. W. Nelson's No. 1 Moglia, Survey 672, located 150 feet east line, 2,584 feet south line, is drilling at 1,550 feet. Usher Carson's No. 2 D. Benavides, Survey 1,613, Block 11, located 150 feet north and west lines, is drilling at 600 feet.

**Zapata County**

National Oil Co.'s No. 1 Don B. Adams, Section 11, Block 4, spudded in April 5. John Pappas' No. 1 Cuellar, Porcion 33-34, Block 5, located 333 feet northeast lines, 194 feet southeast lines, is drilling at 800 feet. R. V. Hill's No. 5 Ramirez, Survey 627, located 400 feet northwest and northeast lines, is rigging up.

**Atascosa County**

Amphion Oil Co.'s No. 1 Sam Schlisser, Farm B, 300 feet northeast lines, 600 feet southeast lines, at 1,105 feet is reducing hole from 11 to 9-inch.

**Bastrop County**

Gypsy Producing Co.'s No. 1 Lottman estate is shut down at 2,320 feet. Billy Mayfield's (Krebs-Leach) No. 2 McColl, Stephen F. Austin Survey, 50 yards west of No. 1, is drilling at 1,788 feet.

**Bexar County**

Dixie Oil Co.'s No. 1 Medina Irrigation Co., Survey 180, located 1,666 feet north line, 470 feet west line, spudded in and shut down. Humble Oil & Refining Co.'s No. 2 Oppenheimer, J. M. Urriegas Survey, 300 feet north of No. 1, is at 4,390 feet in sandy shale. Indian Creek Oil & Gas Co.'s No. 1 W. Wolfsohl, Survey 5, located 180 feet CEL, is at 1,575 feet setting casing. W. M. Morgan's No. 1 H. L. Martin is drilling at 400 feet. Moore-Jauer's No. 1 Holly R. Ellison, T. York Survey, 2,916 feet east line, 1,500 feet south line, is drilling at 825 feet in Comanche Peak, gas getting stronger as they go deeper. J. Morgan Russell's No. 1 G. A. C. Halff, location in city limits of San Antonio. B. L. Raborn's No. 1 Engelmann, John James Survey No. 73, located 300 feet south line, 600 feet east line, is standing at 1,715 feet.

**Bee County**

Mission Drilling Co.'s No. 1 Ray is drilling in Pettus area.

**Blanco County**

C. W. Bates' No. 1 Herman Massey, Henry Manton Survey, 920 feet north line, 660 feet east line, is standing at 214 feet. Robert A. Rodson's No. 1 Glasscock, Survey 50, located 150 feet CEL, is standing at 962 feet, oil in the hole. H. J. Uhl and C. E. Seldman's location is south of Johnson City.

**Calhoun County**

B. F. Thompson's No. 1 Thomas, John P. Tully Survey, 920 varas north, 5° 30" west of north, corner of John C. Post Survey, is fishing at 2,730 feet.

**Caldwell County**

Alexander & Smith's No. 1 J. A. Cardwell, J. P. Bell Survey, 150 feet south and west lines, is drilling in chalk at 1,252 feet. Al Buchanan and others' No. 1 W. W. Callahan, John Roe Survey, 150 feet east line, 800 feet south line, is drilling at 1,000 feet. Russell's No. 1 Hill, McCullough Survey, is standing at 547 feet. Whittington and others' No. 1 J. G. Horner, Francis Berry Survey, is standing at 1,140 feet connecting up new boilers.

**Colorado County**

National Oil Co.'s No. 1 H. T. Brandt, Freeman Pettus League, 150 feet south line and 1,000 feet west of highway, is location. Shell Petroleum Corp.'s No. 1 Neuendorff, J. Brod Survey, 500 feet east line, 200 feet south line, is drilling at 1,300 feet.

**Edwards County**

A. M. Griffith's No. 1 Wardlaw, Section 60, Block V8, located 1,050 feet west line, 150 feet south line, is drilling at 1,260 feet.

**Fayette County**

Marshall & Moore's No. 1 John A. Kerr, M. Muldoon League No. 5, about 250 varas to north line and little west of center, is drilling at 2,364 feet and showing some gas. National Oil Co.'s No. 1 J. C. Melcher, S. M. Williams League No. 1, located 300 feet north and east lines, is drilling at 2,920 feet, core showing brown sandy shale and shells.

**Goliad County**

J. E. Alexander's No. 1 Frommie, 10 miles north of Goliad, is drilling at 725 feet. Booth McCarson's No. 1 Murray, Survey 3, Block 11, located 200 feet west line, 150 feet south line, is drilling at 1,460 feet.

**Gonzales County**

Alexander & Smith's No. 1 Billings, G. Gwinn Survey, spudded in and shut down. Joe Bruner's No. 1 Miller, Richard Heath Survey, 3,040 feet north line, 200 feet east line, is drilling at 1,710 feet, believed in top of Midway. Crown Petroleum Corp.'s No. 1 Hattenbach, James Jones Survey, 900 feet east line, 200 feet south line, is spudding in. W. D. Flynn's No. 1 Wilhausen, S. Bateman Survey, east central part, is shut down at 5,212 feet.

Finnell & Elam's test is location 5 miles north of Waelder, moving in rig. Linderman Brothers' No. 1 Richard Heath Survey, 2,120 feet north line of creek, 1,930 feet east line of farm, has set 84 feet of surface casing. W. G. Malone's No. 1 D. G. Staton, J. M. Salinas Survey, 375 feet southwest lines, 1,275 feet northwest lines, is drilling below 400 feet.

**Guadalupe County**

Pat Armstrong is straightening out titles for No. 1 Halm in Wakefield Survey. J. J. Christie's No. 1 Taylor Thomas, Gustavus Chotwell Survey, 1,100 feet southwest lines, 1,130 feet southeast lines, is at 1,280 feet showing some gas before hitting last cap in which it is now drilling. A. G. Kiffer's No. 1 B. B. Dix (taken over from G. A. Greene), Ira Nash Survey, 610 feet north of road, 320 feet east line, is drilling at 800 feet. Mid-Kansas Oil & Gas Co.'s No. 1 C. Lehmann, J. B. Cowan Survey, 900 feet northeast lines, 150 feet southeast lines, is rigging up with rotary. Magnolia Petroleum Co.'s No. 1 F. A. Whitley, Samuel Highsmith Survey, 300 feet to C NEL, is drilling at 2,300 feet. Miller Brothers' No. 1 Gib Springs, E. Cortari


WORLD NEWS STORIES OF THE KOHLER ELECTRIC PLANT—No. 2

Want Some

STOCK

in the Byrd-Antarctic Power & Light Company?

THIS company has the exclusive franchise for the town of Little America, Great Ice Barrier, Antarctica. The town has forty-two inhabitants, five houses, airplane hangars, and a wireless station that calls New York as nonchalantly as you call the grocer.

Every house in Little America takes current from the Company. Commander Byrd and his aides study their maps under electric lights as bright as those in your own home. And electricity sparks the words across 10,000 miles of ether when Russell Owen sends his daily dispatches to the newspapers of *Great* America.

Two small Kohler Electric Plants supply *all the current* for Little America. We recommend this stock, when, and if issued, for we know the dependability of Kohler Electricity.

*The oil men know these plants*

Five Kohler plants in all are serving the Byrd Expedition's base and supply ships—convincing proof of the reliability that these machines have demonstrated to those who know good electrical equipment.

Thus, you will find hundreds of Kohler Electric Plants hard at work in the oil fields. These rugged machines run on natural gas or gasoline, travel from job to job, floodlight night drilling, illuminate shops and offices, and supply auxiliary power for drill presses and pipe-cutting machines. Mail the coupon for details of models from 800 watts to 10 K. W., for every purpose.

KOHLER OF KOHLER

Kohler Co. Founded 1873 — ELECTRIC PLANTS — *Shipping Point* Sheboygan, Wis.

ALSO MANUFACTURERS OF KOHLER PLUMBING FIXTURES

Kohler Co., Kohler, Wis. O & G J 4-18-29

*Gentlemen:* Please send the Kohler Electric Plant catalogue.

Name..... Street.....

City..... State.....

Use in which interested.....

Survey, 450 feet west line, 775 feet south line, is drilling 80 feet in Edwards, topped at 2,256 feet. Eugene Sight's No. 1 C. Woehler, John King Survey, 310 feet north line, 210 feet east line, is drilling at 2,320 feet in base of Georgetown.

**Jackson County**

The Texas Company's No. 1 W. C. Moore, Survey 208, I.&G.N. Survey, 5,108 feet south line, 150 feet west line, is drilling at 3,600 feet. Wright Brothers' No. 2 Classen is shut down at 3,945 feet; No. 8 Drushell has derrick up.

**Karnes County**

Hurador Oil Co.'s No. 1 W. E. Porter, 6 miles south of Runge, is drilling at 1,000 feet. Townsend's test, 4½ miles northwest of Runge, is location.

**Kendall County**

A. D. Gibbs' No. 1 A. J. McCrocklin, 6 miles southeast of Sisterdale, is moving in tools.

**Kerr County**

McMan Oil & Gas Co.'s No. 2 Walter Schreiner is location. L. R. Page and associates' No. 1 Neal, Survey 2, Block 15, center, has rig up and tools on the ground.

**Kimble County**

H. A. McLean's No. 1 Cannon, Section 741, 300 feet south and east lines, is drilling at 125 feet.

**Kinney County**

Lloyd Oil Co.'s No. 1 G. Bedell Moore estate, Survey 117, located 1,320 feet CNL, is shut down at 1,000 feet. Mardon Oil Co.'s No. 1 Jim Clamp, Survey 346, Section 1,492, at 2,540 feet, while pulling string of casing has cleaned hole, then bridged and later hole filled with oil.

**Maverick County**

Ryan Consolidated Petroleum Co.'s No. 2 Indio ranch, Survey No. 7, is standing at 1,320 feet. Rycade Oil Corp.'s No. 4 J. M. Chittim, Section 104, Block 7, is drilling at 475 feet; No. 3 J. M. Chittim, Section 116, Block 7, is drilling at 3,318 feet; No. 4 Sullivan, Section 112, Block 7, is drilling at 200 feet.

**Medina County**

California-Medina's No. 1 Rothe, Survey 1,012, is shut down at 3,282 feet. F. M. Cline's No. 1 Bendele, Survey 593, is shut down at 815 feet. Donaldson Oil Development Co.'s No. 1 Adams Co., Survey 25, located 160 feet east line, 1,227 feet south line, is at 3,125 feet, dry in Edwards. Lynch and others' No. 1 Mott is setting pipe at 580 feet to shut off water. Richardson's No. 2 Bendele, Survey 593, is shut down at 937 feet. Cecil Switzer's No. 1 Zerr is getting ready to drill in. W. W. Woodsworth's No. 1 T. P. Johnson, J. Hall Survey, 450 feet south and east lines, has derrick up.

**Milam County**

J. M. Burkhead's No. 1 C. Weigmann has spudded in. E. L. Chapman's No. 1 J. M. Gilchrist is moving in machinery; location made for another deep test northwest of Rogers & Heep test. H. E. Elliott's No. 1 J. C. Moore is erecting derrick. Groneman Brothers' No. 1 Dornhoefer has derrick up and moving in rig. J. C. Hawkins made location for Trinity test 1½ miles northwest of Thorndale. Rogers & Heep's No. 1 J. B. Duncan is drilling at 200 feet.

**McMullen County**

Natt Holman's No. 1 Shiner, Henry M. Brewer Survey, 7,515 feet south of Vier, 3,084 feet east line, is shut down at 780 feet to lay water line.

**Nueces County**

Pearson and others' No. 1 Bluntzer, Block 3, NW cor., is at 2,586 feet where it tested some gas. R. & G. Corp.'s No. 1 Roberts is location; No. 1 Ragland is drilling at 2,800 feet. Nueces River Basin Development's Co.'s No. 1 Allen is drilling at 3,035 feet. F. P. Zoch's No. 1 Kelly, 7 miles southwest of Corpus Christi, is drilling at 2,200 feet.

**Refugio County**

Blanco Creek Oil Co.'s No. 1 St. John, J. Scott Survey, 708 feet northwest lines, 3,074 feet northeast lines, is at 2,544 feet showing trace of oil and gas at 2,450 feet and shut down for drill pipe. Mission Drilling Co.'s No. 1 Mitchell at 4,036 feet swabbed and bailed salt water and mud after showing oil and drill stem test will be made.

**San Patricio County**

J. T. LaPrade's No. 1 D. Odem, 1 mile south of Sinto, is drilling at 2,000 feet.

**Zavala County**

Tritex Oil Co.'s No. 1 Clay Burns is drilling at 680 feet; No. 1 Childress is moving in rig.

## GULF COAST

(Continued from Page 51)

bailing to test the shallow gas sand at 1,225 feet.

**DeWalt—Fort Bend County**

Two wells are expected in at DeWalt. Humble Oil & Refining Co.'s No. 3 Brazos Farms has set screen at 3,568 feet and No. 4 had set screen at 3,441 feet. No. 7 Sugarland is drilling gumbo at 1,237 feet. No. 3 Camp is drilling sandy lime at 2,568 feet. No. 4 Camp is a location No. 2 Nelson is drilling sticky shale at 3,361 feet. No. 5 Brazos Farms is drilling sandy shale at 3,438 feet. No. 6 Brazos Farms is rigged. No. 1-B Deatherage is a derrick as is No. 4 Hamner fee. Nos. 1, 2 and 3 Hamner fee are locations.

**Humble—Harris County**

Humble Oil & Refining Co.'s No. 1 Williams, south side deep test, is drilling gumbo at 2,640 feet. The Texas Company's No. 39 Stephenson is drilling sticky shale at 4,805 feet. The latter company also has derricks up for Nos. 262 and 263 Landslide. South Texas Petroleum Co. has a rig up for No. 4 Morris. The Texas Company's No. 22 House, north side, is drilling hard sand and shale at 5,009 feet.

**Blue Ridge—Fort Bend County**

Gulf Production Co.'s No. 7 Invincible, east side of the dome, tested salt water at a total depth of 3,934 feet and is to be deepened. This company's No. 17 B. Blakely is drilling shale at 3,371 feet and its No. 15 Luscher is a derrick. South Texas Petroleum Co.'s No. 1 Blakely, a former well being deepened, tested salt water at 3,940 feet and is pulling screen to deepen.

Humphreys Corp.'s No. 5 West-Schenck, south side, is waiting a standard pumping rig as is Moody Corp.'s No. 6 West-Schenck. The former is in sticky shale showing oil at 4,171-81 feet while the latter is in a sand at 4,586 feet.

Navarro Oil Co.'s No. 6-B Robinson, northwest side, has set one joint of 4¾-inch screen in sandy shale showing oil and at the close of the week was bailing to test.

**Pierce Junction—Harris County**

Anderson & Plummer's No. 5 Whitehead, north side of the dome, is drilling shale at 4,345 feet. Moody Corp.'s No. 3 Hume, a workover, is drilling at 3,835 feet. Smith and associates' No. 1 Parsons has been worked over and has reset screen at 4,315 feet to test.

On the northeast flank, T. G. Shaw and Texas Exploration Co.'s No. 2 Fitzsimmons-Barrow tested salt water at 3,800 feet. Gulf Production Co.'s No. 3 Fitzsimmons-Hamman has rigged up. Navarro Oil Co. and Texas Exploration Co. are building derrick for No. 15 Dooley. Gulf Production Co.'s No. 28 Taylor, east flank, is drilling sand and shale at 4,056 feet and its No. 8 Cain is drilling hard sand and shale at 3,035 feet. Gulf's No. 29 Taylor, on the southwest flank, an east offset to Moody Corp.'s wildcat producer, No. 4-B Settegast, is spudding. Pure Oil Co.'s No. 1 Herman Estate, a northward offset to the Moody wildcat, is drilling hard sand and shale at 3,817 feet. Harvey Smith and associates' No. 2 Herman Estate, also a southwest flank wildcat test, is drilling lime and shale at 1,532 feet. Rio Bravo Oil Co. has three wells on oil showing sand and has cemented casing. In No. 12-A Settegast, casing has been run at 4,574 feet and in No. 13-A Settegast it is at 3,611 feet. This company's No. 7-B Settegast, a workover, has set casing at 4,620 feet to retest.

South Texas Petroleum Co.'s No. 1 Meyers, south side wildcat, is drilling gumbo at 2,543 feet.

**Liberty—Liberty County**

Fort Bend Oil Co.'s No. 2 Riviere, shallow sand test, is drilling at 1,737 feet. No. 3 Riviere is drilling at 2,312 feet. Humble Oil & Refining Co.'s No. 3-B Riviere, same area, is running tubing, the well failing to flow from sand at 1,855 feet. No. 4-B Riviere is drilling sandy shale at 2,336 feet. Abercrombie & Harrison's No. 1 Riviere is drilling at 1,538 feet. Liberty Oil & Sulphur Co.'s No. 1 Monroe is drilling at 701 feet. Mecom Oil Co.'s No. 1 Barrett, is drilling at 2,015 feet. Navarro Oil Co. has abandoned its No. 2 Baldwin Community with a junked hole in cap rock at 1,355 feet. No. 3 Baldwin Community is drilling shale and sand at 3,027 feet. The Texas Company's No. 20 Staiti is drilling sand and shale at 1,121 feet. Vacuum Oil Co.'s No. 11 Barrett is drilling gumbo at 1,787 feet.

Sun Oil Co.'s No. 41 Mitchell in another shallow sand pool to the north of the above tests came in as a small producer at 2,140 feet but soon sanded up, and in the other shallow sand area still further north, Empire Gas & Fuel Co.'s No. 2 Goggan is drilling shale at 2,815 feet. Sun Oil Co.'s No. 40 Mitchell, east flank deep test, tested salt water at approximately 3,600 feet.

On the northwest flank of the dome, The Texas Company's No. 5 Green is drilling sand and shale at 2,840 feet. This company's No. 3 Pickett is drilling sand and shale at 4,598 feet.

**Big Creek—Fort Bend County**

Gulf Production Co.'s No. 52 Davis is testing an oil showing at a total depth of 3,847 feet. Its No. 18 Davis, a workover, is drilling at 3,559 feet. Navarro Oil Co. has made locations for No. 4 Davis and No. 3 Hausler. The Texas Company's No. 5 Wheat is drilling gumbo and lime at 1,361 feet.

**Nash Dome—Brazoria County**

Rycade Oil Corp.'s No. 23 Wisdom is drilling hard lime at 4,527 feet.

**Hull—Liberty County**

Gulf Production Co.'s No. 88 Phoenix, completed last February flowing 400 bbls. daily at 2,267 feet, is cleaning hole to deepen. This company's No. 25 Morris-Phillips is drilling at 4,412 feet. Gulf's No. 42 Phoenix, a former well, is drilling deeper at 2,623 feet. Republic Production Co.'s No. 50 Dolbear is drilling at 3,814 feet and No. 65 Dolbear at 2,218 feet. This company also is rigging up for No. 1 Taylor. Daisetta Oil Co. is rigging up for No. 1 Wilson. Empire Gas & Fuel Co.'s No. 21 Barngrover is drilling at 2,956 feet.

**Saratoga—Hardin County**

Rio Bravo Oil Co.'s No. 107 B.B.B.&C. is drilling rock at 617 feet. West Production Co.'s No. 1 Baker is drilling gumbo at 3,802 feet.

**Goose Creek—Harris County**

Humble Oil & Refining Co.'s No. 75 Simms-Smith, wildcat north of the field, is drilling sandy shale at 4,271 feet. Russell Farrell's No. 5 Gillette, a former well deepened, is in an oil showing sand at 1,994 feet and late in the week was bailing to test.

**Spindletop—Jefferson County**

Unity Oil Co.'s No. 100 McFaddin is in a shallow oil showing sand at approximately 1,312 feet and is preparing to set 6-inch casing. Yount Lee Oil Co.'s No. 29 McFaddin, which tested salt water at 4,624 feet, is preparing to sidetrack at approximately 4,375 feet. This company's No. 94 McFaddin has drilling plug at 4,998 feet and is coring deeper. No. 97 McFaddin is drilling shale at 4,379 feet. No. 99 McFaddin is waiting cement to set at 3,976 feet. No. 100 McFaddin is drilling gumbo and lime at 2,467 feet. No. 101 McFaddin is a derrick.

Yount Lee Oil Co. also is preparing to deepen its No. 21 fee. No. 5 Davis is swabbing to test at 4,931 feet. No. 76 Gladys City is drilling sand at 5,604 feet. No. 77 Gladys City is drilling sand and shale at 3,425 feet. No. 84 Gladys City has set 7-inch casing to test a sandy shale showing oil at 3,775 feet. No. 86 Gladys City is drilling gumbo and lime at 1,181 feet. No. 87 Gladys City is drilling gumbo and lime at 356 feet and No. 88 is rigged.

### SOUTH LOUISIANA

**Hackberry—Cameron Parish**

Calcasieu Oil Co.'s No. 6 Valery, East Hackberry, tested dry at 3,878 feet and has deepened to 3,931 feet where screen has been reset for another test. The company also is building derrick for No. 6 Dorion.

On the Old Hackberry Dome, Camero Oil Co. and Rycade Oil Corp.'s No. Duhon is drilling gumbo at 737 fee Moon Oil Co.'s No. 3 Sanner has ru tubing and is swabbing. It is in th oil sand at 3,221 feet. Rex Petroleu Co.'s No. 2 Noble is in the oil sand a 3,242 feet and has set 6⅝-inch casing t test. Bottom of the hole is at 3,242 fee Sun Oil Co.'s No. 2 Vincent is swabbin after running tubing. Sunshine Oil Co. No. 1 Benoit is drilling gumbo at 97 feet. Progressive Oil Co. has rigged u for No. 1 Little as has Noble and Mc Daniel for No. 1 Ellender. Sun Oil C also has a derrick up for No. 3 Vincent

The above operations are all on th south flank. On the west side of th dome, Rycade Oil Corp. and Humble Oi & Refining Co.'s No. 1 Gulf Land drilling sticky shale at 3,952 feet. No. Gulf Land is drilling lime rock at 2,99 feet.

**Lockport—Calcasieu Parish**

Vacuum Oil Co. and Gulf Refinin Co.'s Nos. 13 Miller, 15 Miller and 2 Miller are rebuilding derricks. Derrick on these tests were blown down in las week's wind storm. No. 13 Miller wa in an oil sand at 4,396 feet. No. 1 Miller was preparing to deepen from it former producing depth at 4,378 feet, an No. 24 was drilling at 3,627 feet. N 5 Bayou D'Inde is drilling hard sand a 3,695 feet and No. 6 Bordages is pullin screen to deepen. The latter bailed sa water in a test of a sand at 3,771 feet.

Shell Petroleum Corp.'s No. 1 Mill is drilling rock at 3,891 feet.

**Jennings—Acadia Parish**

Yount Lee Oil Co.'s No. 4 Crowley drilling sand at 6,227 feet. This com pany's No. 6 Housierre-Latrielle is stand ing at 6,754 feet waiting drill stem. Al shire-Bolyard Oil Co. has a location fo No. 5 Syndicate Clemont.

**Edgerly—Calcasieu Parish**

Rex Petroleum Co.'s No. 9 Hunter, former well deepened, tested salt wate at 3,786 feet and has been shut down Wilson-Broach's No. 2 Wilson tested sal water at 3,122 feet and has been shu down. Hercules Oil Co.'s No. 3 Paraffin has been shut down in sidetracked hol at 3,390 feet. C. M. Crotty Oil Co. No. 7 Lillard is sidetracking at 2,19 feet.

**Bayou Bouillon—St. Martin Parish**

Rycade Oil Corp.'s No. 6 Bouillon fe has drilled into salt to 3,702 feet an probably will be abandoned. No. Bouillon fee is drilling gumbo at 1,03 feet. No. 3 Louisiana State is drillin black shale at 3,223 feet.

### MISCELLANEOUS FIELDS

At Markham, Rycade Oil Corp. an Humble Oil & Refining Co.'s No. 6- Kountze has set 9-inch casing at 3,74 feet to test an oil sand at 3,751-71 fee West Production Co.'s No. 1 Myer Markham, is drilling rock at 3,050 fee Sun Oil Co.'s No. 2 Kovelcik, North Day ton wildcat, is drilling gumbo and shal at 2,100 feet. Sinclair Oil & Gas Co has started drilling on its No. 6 Norto Damon Mound. Gulf Production Co. ha a location for No. 19 Moore, Orchard

Yount Lee Oil Co.'s No. 4 Louisian Petroleum Co., Anse La Butte, St. Mar tin Parish, is drilling shale at 4,969 fee Pure Oil Co.'s No. 7 Yount Lee at Swee Lake, Cameron Parish, is drilling shal and lime at 4,817 feet. No. 8 Yount Le Sweet Lake, is drilling hard sand a 5,215 feet.

### MISCELLANEOUS WILDCATS

**Texas**

Brazoria County — Shell Petroleum Corp.'s No. 4 Allen, Allen Dome, a for mer producer drilling deeper, is delaye at 5,154 feet by stuck drill stem. Pa terson and associates have abandoned No. 2 Krupp, Clemens Dome, in cap roc at a total depth of 547 feet, this te flowing sulphur and salt water. Empir Gas & Fuel Co. has made location for No 3 Brock, Stratton Ridge, and is buildin

(Continued on Page 143)

# Eastern Gasoline Market Is Improved

## Domestic Consumption Increasing With Export Demand Better. Lubs Strong and Kerosene Business Picking Up

By A. E. Mockler
*New York Bureau, The Oil and Gas Journal*

NEW YORK, Apr. 15.—The long expected up-turn in Eastern gasoline markets materialized this week, with increases made in the tank car basis throughout the entire territory, and in tank wagon schedules in several sections. Some differential in the tank car basis still prevails, with a wider price range than normally, but this situation is expected to adjust itself within a few days. Lubricating oils have shown continued strength throughout the week, and offerings of wanted grades are in most cases smaller than the demands of the trade. Further gains in prices in this branch of the market are looked for. Kerosene business has picked up somewhat, and the market is in slightly better position. There have been no changes of outstanding importance in the remainder of the East Coast market.

With export markets taking on a little more activity, and seasonal increase in domestic consumption making itself evident, refiners in East Coast area are viewing the gasoline market outlook with more confidence. The market here has been in quite a slump for the past few months, and leading interests are inclined to look for a rather sharp recovery. Should demand continue to grow at the rate experienced during the past week, it is believed here that the early part of May will witness a market about a half cent over the present basis.

East Coast refiners have been regulating their production of gasoline and other refined products more closely to trade requirements since the first of the year, and there has been a definite program on the part of most refiners to hold down to a minimum their additions to surplus stocks. Cracking equipment is being utilized quite extensively, with every effort made to obtain the maximum yield of gasoline with a minimum output of fuel oil. That this policy is bearing fruit is indicated by the improved feeling in the market for bunker "C", not only in East Coast markets, but at the Gulf as well.

### Tank Car Gasoline

A general upward movement in prices developed this week. Warner-Quinlan Co., which had been the low seller in the market here at 8⅝ to 8¾ cents per gallon, at its refinery, was the first to mark up prices, putting U. S. Motor gasoline up to 9¼ cents per gallon. This advance was followed by Acewood Petroleum Co. and Walburn Petroleum Co., both of which advanced U. S. Motor a quarter cent to 9 cents per gallon. The larger companies also went up a quarter cent per gallon. Standard Oil Co. of New Jersey marking its quotation up to 9 cents per gallon on April 11, which increase was followed in by the other leading factors here. Should weather conditions continue as favorable as was the case for several days during the week just ended, it is believed that the market will witness another advance in the near future, consumption having been stimulated materially.

Jobbers were heavy buyers of U. S. Motor during the early part of the week, many distributors in East Coast territory filling their storage with gasoline at 8¾ to 8¾ cents per gallon. This was naturally followed by a slight lull in buying, following the advance to 9 cents, but the trade is expected back into the market for stocks in a large way during the week just starting. The movement of gasoline on marginal contracts is expected to ease off, and spot operations increase, as the tank wagon situation strengthens.

### Tank Wagon Gasoline

Gulf Refining Co., Sinclair Refining, and Atlantic Refining Co., effective April 11, advanced their tank wagon gasoline prices 1 cent per gallon in Pennsylvania and Delaware. The advance came about as a result of the strengthening in the tank car market and the sharp gain in consumption during the week. There is some talk heard regarding the possibility of an increase in New York territory, but it is not believed that any general advance will be made until leading companies in this territory have straightened out the situation in up state markets, where price cutting has been rampant, and retail gasoline has sold at an average of 5 cents per gallon under the posted price for the remainder of the territory.

There is considerable competition from so-called independent marketers in metropolitan New York territory. The larger companies are getting from 18 to 19 cents per gallon for their regular lines of motor fuel at filling stations. Warner-Quinlan is quoting 16 cents at its stations, with some of the smaller independents selling as low as 14 cents per gallon at retail. The stronger undertone in the tank car gasoline market, however, is expected to change this situation shortly, and result in bringing up the prices of the smaller marketers. Warner-Quinlan is now taking over the Municipal chain of stations. Shell stations are making their appearance in New York City, and Beacon Oil Co.'s products are also becoming a more familiar sight in this city.

### Gas Oil

The market range holds at 5 to 5½ cents per gallon, bulk, according to seller and grade. The straightrun product is in good demand, and is showing the most strength at the moment, with holders quoting 5¼ to 5½ cents per gallon for this grade. Refiners in most cases are still inclined to withhold offerings of the straightrun product from the market, and store these supplies for their expected cracking requirements later on in the season. Some of the large industrial consumers in the local territory have been cutting down in their gas oil takings further this week. While contract movement is holding up fairly well, there is less open-market buying on the part of the gas companies, some of which had been supplementing their contract takings in this manner. Low-grade gas oil, which has been moving in some volume as furnace oil, has slackened off a little, and supplies, which were rather tight a short time ago, are now more plentiful.

### Lubs

Cylinder stocks have shown continued firmness this week, and demand is well maintained on all grades. While no further price advances have materialized during the week, quotations are showing considerable strength, and sellers are asking advances in some instances, with a probability that the general market will again move upward in the near future. Operators here are experiencing considerable difficulty in locating stocks for prompt shipment in the field and express the belief that they will be forced to bid higher prices to bring out sufficient cylinder stocks to take care of the trade's requirements during the second half of April. Refiners in many cases are showing a tendency to withhold their spot stocks of lubs from the market, in the expectation of a further general increase within the next few weeks. Bright stocks in particular appear to be scarce at the moment, while 600 flash offerings are also limited. Domestic buyers have come into the market for supplies in sizable volume this week, and are inclined to bid up the market further in their anxiety to obtain prompt shipment stocks for their more pressing requirements. The extent of this domestic demand, it is felt, will mould the course of the market over the next fortnight. Export business has remained active, and inquiry is showing signs of picking up further on some grades. Great Britain has been conspicuous in the present foreign buying movement, while considerable quantities are also being called for from the Continent, and South American and South African buyers likewise are in the market in a fair way.

Red and pale oils thus far have not reflected the activity of the cylinder stock market. Buyers are taking red and pale oils in but moderate volume, and are showing no inclination to anticipate their requirements. Prices remained unchanged.

### Diesel Oil

None of the other large factors in this area has followed the advance named a fortnight ago by Shell Eastern, and the market here is still quoted at $2 per barrel, in bulk, f.o.b. refinery terminals. A little material is offered out under this figure in some quarters of the trade, but the amount of this off-price oil is not sufficient to disturb the general market position. Marine consumption of Diesel oil is on the increase, a constantly growing fleet of Diesel-powered vessels entering the New York service. Several large transatlantic vessels which will be put in the New York trade are now under construction in Europe, while a number of American Diesel-powered vessels of large size are also building.

### Kerosene

No price change has developed in the local tank car market, which remains held at 8 cents per gallon for 41-43 water white. Spring inquiry is beginning to make itself apparent in some sections of the territory, and the market is a little improved in point of volume. Jobbers, however, are still rather conservative in their operations, and a large part of the spot business reaching refiners calls for immediate delivery. Stocks of kerosene are by no means excessive, and some interests which had been bearish on the price outlook over the summer season have not taken a more constructive view of the situation. This has been reflected by an easing off in the pressure to sell in some quarters. Some revival in tank-wagon business has developed during the week, and this branch of the refiners' sales department is showing a heavier movement. The market remains held at 15 cents per gallon for water white, tank-wagon deliveries, with sales in up-state and New England markets reported to be showing substantial development.

### Bunker Oil

Leading refiners continue to maintain the market at $1.05 per barrel, in bulk, at principal East Coast refineries, moving holding up well throughout the week. Refiners were greatly interested in the publication of statistics showing a falling off in bunker oil consumption by merchant vessels last year. The report shows that fuel oil delivered to merchant vessels' bunkers at United States and insular ports in 1928 aggregated 81,305,000 bbls., a drop of 838,000 bbls., or 1 per cent, from 1927, when 82,143,000 bbls. were delivered. These deliveries do not include the U. S. Navy, which in 1928 took 6,300,000 bbls., including Diesel oil, and a similar quantity in the previous year. These figures for the Navy do not include consumption at yards and stations. Of the 81,305,000 bbls. of bunker oil delivered last year, 23 per cent, or 18,733,000 bbls., was foreign oil, against 15,436,000 bbls., or 19 per cent of the 1927 total. Deliveries of 31,197,000 bbls. were made at Atlantic Coast ports in 1928, this total including 17,234,000 bbls., or 55 per cent of foreign fuel oil. In 1927, deliveries to Atlantic Coast ports amounted to 31,458,000 bbls., of which 14,452,000 bbls., or 46 per cent, was foreign oil. Pacific Coast port deliveries last year, all of which were domestic oil, totaled 32,231,000 bbls., as compared with 35,027,000 bbls. in 1927. Gulf Coast ports last year took 16,455,000 bbls. of fuel oil, of which 1,499,000, or 9 per cent, represented foreign oil. In 1927, Gulf Coast port deliveries were 14,368,000 bbls., of which total 984,000 bbls., or 6 per cent of the total, were foreign oil. Deliveries of bunker fuel oil at ports of insular possessions in 1928 amounted to 1,422,000 bbls., as compared with 1,290,000 bbls. in the previous year, and were of domestic oil in both instances.

Refiners, in commenting on the 1928 consumption figures, express the belief that 1929 sales totals will not only make up the ground lost in 1928, but will show increases over the volume recorded during 1927 as well. Current withdrawals for bunkering purposes in the East Coast area, it is reported, are running in excess of those for the corresponding months in 1928, with no change in this situation indicated for the near future.

### Paraffin Wax

Spot wax is still showing the effects of selling pressure on some melting points, and the undertone is easy. Buyers are inquiring for stocks only in limited volume, and it appears likely that hand-to-mouth trading will continue to characterize spot operations until the market develops a stronger tone. Domestic consumers' stocks are believed to be running rather light, but thus far, buyers are showing no anxiety regarding their ability to cover later requirements at current prices or better. The export division of the market appears in much the same position.

Business is reported in 120-122 a.m.p. refined paraffin this week at 4½ cents per pound, with 125-127 a.m.p. held at 4¾ cents, 130-132 a.m.p. at 6 cents, 133-135 a.m.p. at 6⅝ cents, and 135-137 a.m.p. at 6⅞ cents per pound. These prices apply to the ordinary run of business, and it is probable that in a large way all of the foregoing prices could be shaded.

While refiners in the Pennsylvania Field appear still rather anxious to book wax for prompt shipment and delivery over the balance of April, there is a noticeable tendency on the part of most sellers to hold back on later positions. The refiners are evidently counting on seasonal improvement in consumption, as well as heavier buying to replace depleted stocks of consumers, to bring about a better feeling in the market before the close of the second quarter of the year.

### Petrolatum

A slight gain in domestic inquiry has developed in this week's market, and while the market position is a little better, there have been no advances in quotations. The white grades are moving out in better volume, with snow held unchanged at 8½ cents per pound, and lily at 7½ cents on spot. Amber grades have also sold to the domestic trade in a better way this week, with extra quoted at 3¾ cents per pound and amber a quarter cent lower. Export trading, however, shows little change. Export operators are inquiring for stocks in but limited volume, and most of the demand

(Continued on Page 143)

# Natural Gasoline Manufacture

## Obtain Substitute For Blau Gas From Residue Plant Gas

From Bylleshy News

It requires an active and far-seeing imagination to predict the future possibilities and uses of the apparently commonplace commodities with which we are more or less familiar as they apply to our everyday life. As an illustration of this—how few of us could have visualized or even have thought of the powerful motors of the gigantic dirigible, the Graf Zeppelin, a recent visitor to our shore, being operated with a component of the natural gas taken from the supply which furnishes the domestic and industrial needs of Louisville, Ky.

That this has been done successfully is attested to by the information supplied by Lt. Com. Z. W. Wicks, American naval officer, in charge of refueling the Graf Zeppelin at Lakehurst, N. J. In a telegram to the Kentucky Oxygen-Hydrogen Co. he stated that the Germans found by tests made preliminary to the return flight of the Graf Zeppelin to Germany that the fuel gas was entirely satisfactory and even superior to and higher in calorific value than their own fuel, "Blau gas." The American fuel gas, known as "Kenogen," was manufactured by the Kentucky Oxygen-Hydrogen Co. of

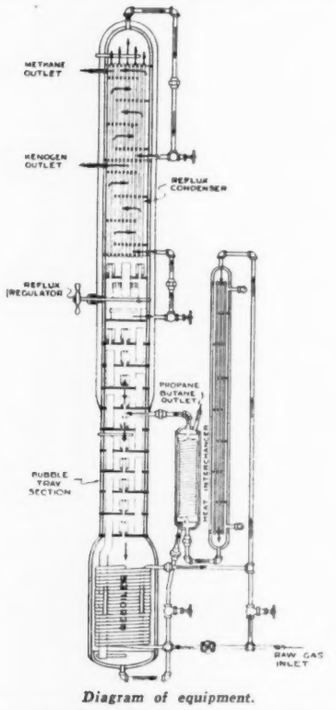



*Diagram of equipment.*

Louisville from by-product gas produced at the Winchester, Ky., natural gasoline plant of the Louisville Gas & Electric Co., a subsidiary of the Standard Gas & Electric Co.

Prior to the time that the Germans were seeking a fuel gas to be used in the Graf Zeppelin on its return flight from the United States, an investigation of the operation and production of the charcoal process natural gasoline plant at Winchester, Ky., was undertaken by the writer for the purpose of increasing the gasoline production of the plant. Incidental to this investigation, an analysis made by the United States Bureau of Mines of the eastern Kentucky natural

(Continued on Page 145)

## NATURAL GASOLINE ASSOCIATION OF AMERICA ANNOUNCES PROGRAM

R. E. Miller, secretary of the Natural Gasoline Association of America has announced the program for the three-day annual meeting of the association to be held in Tulsa at the Mayo Hotel, May 21 to 23.

As in the past, each paper or talk will be followed by open discussion. The first day will include the address of welcome and the report of the association's work by its president, Harry Trower. Technical papers and discussions will fill the balance of the two and one-half days of the meeting with a stag smoker scheduled by the Natural Gasoline Supply Men's Association for Tuesday evening and a dance Thursday evening. Wednesday evening is left open. Following is the program as announced:

**TUESDAY, MAY 21**

**Forenoon**

F. L. Chase, Chairman

Welcoming address—F. L. Chase.
President's address—Harry Trower.
Appointment of committees, if any.
Report of committees, if any.

**Noon**

Dutch lunch—Natural Gasoline Suppiy Men's Association.

**Afternoon**

W. A. Melton, Chairman

Paper—"A Review of Fires and Explosions That Have Occurred in the Industry Over the Past Few Years," by Emby Kaye, Skelly Oil Co.
Discussion—A. M. Coulson, Sinclair Oil & Refining Co.
Paper—"Procedure Necessary to Manufacture and Ship Gasoline Acceptable to the Existing Natural Gasoline Market," by A. T. Scherer, Sinclair Oil & Refining Co.
Discussion—S. B. Crooks, Empire Oil & Refining Co.
Paper—"Repressuring and Its Effect on the Natural Gasoline Industry," by Edward Foran, Saxet Oil Co., Houston, Tex.
Discussion—E. F. Guidinger, Phillips Petroleum Co.

**Evening**

Stag smoker—Natural Gasoline Supply Men's Association.

**WEDNESDAY, MAY 22**

D. E. Buchanan, Chairman

**Forenoon**

Progress report on the research program of the Natural Gasoline Association of America, Dr. George G. Brown, University of Michigan.

**Noon**

Dutch lunch—Natural Gasoline Supply Men's Association.

**Afternoon**

Continuation of report by Dr. George G. Brown.
Discussion led by D. E. Buchanan, as chairman of the session.

**Evening**

Open (no program).

**THURSDAY, MAY 23**

**Forenoon**

A. J. Schlosser, Chairman

Paper—"Gasoline Storage Practice in the Natural Gasoline Industry," by G. M. Davidson, Empire Oil & Refining Co.
Discussion—A. J. Schlosser, Barnsdall Oil Corp.
Paper—"Is Present Gasoline Storage Adequate to Best Serve the Industry?" by J. M. Sands, Phillips Petroleum Co.
Discussion—A. F. Wood, Chestnut & Smith Corp.

**Noon**

Dutch lunch—Natural Gasoline Supply Men's Association.

**Afternoon**

Paper—"The Practical Application of Gas Analysis to the Operation of Gasoline Plants," by a California man to be selected by George L. Ratcliffe, President, California Natural Gasoline Association.
Discussion—R. O. Campbell, Skelly Oil Co.
Paper—"Report on the Work of the Technical Committee of the Natural Gasoline Association of America," by G. G. Oberfell, Phillips Petroleum Co.
Discussion—R. E. Baker, Shell Petroleum Corp.

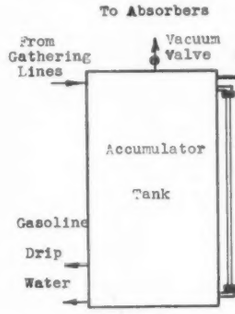
**Evening**

Dance—Natural Gasoline Supply Men's Association.

## A PRACTICAL SUGGESTION

### TAIL GAS ACCUMLATOR

Where it is desirable to accumulate the volatile or "tail house gas" for manufacture into absorption gasoline an apparatus known as the "tail house gas accumulator tank" is essential. This apparatus is placed in or very near the receiver house where the necessary connections are made from it to the rundown lines from the stills. As a basis of judging capacities needed, where there are eight to ten 800-bbl. crude rerun stills the dimensions of this tail house gas accumulator tank approximates 2 feet in diameter by 5 feet in height. A 4-inch line, acting as a header and control line for the removal of the tail gas from the still lines into the look boxes, enters a little below the top of the tank. A control valve is placed at each connection where it enters into a lookbox line. These are opened to a predetermined poi which is governed somewhat by the te perature of the liquid, the desired ra of flow and the vacuum control. Th vacuum is governed by a manometer fill either with kerosene or mercury a placed on the side of the tail gas accu ulator tank and attached to the liqu level gauge. The usual amount of va uum on the mercury is 1½ inches a approximately 5 inches if kerosene used. The flow meter at the absorpti plant indicates the amount of rich g desired and a drip tank is placed halfwa between the absorber and the accumula tank for removing accumulations liquid in the line to the absorber. T feed line (gas) to the absorber ente




the top of the accumulator tank and equipped with a control valve. Th valve controls the vacuum on the accu ulator tank. No back pressure valv are required at the receiving house. safety valve is placed at the absorpti plant for controlling pressures.

Practical suggestions by those connected with the construction and operation of natural gasoline plants are invited. Payment will be made as soon as suggestions are accepted. Address all communications to the Natural Gasoline Department, The Oil and Gas Journal, Tulsa.

## METER SHORT COURSE TO DISCUSS WET GA

Several subjects of interest to the na ural gasoline industry will be discuss at the annual Southwestern Gas Measur ment short course to be held at the Un versity of Oklahoma at Norman, Ap 16, 17 and 18. G. P. Bunn, assista general superintendent of the Phillips P troleum Co., will lead a round-table di cussion on the subject of "Wet Gas." E. Miller, secretary of the Natural Gas line Association of America, will ab represent that industry in a discussion "My Impression of the Meter School The Natural Gasoline Association h had representatives at these short cours in the past and has recently passed resolution fully endorsing the school its work.

### SHUT DOWN PANHANDLE PLAN

The Marland Production Co. has sh down its gasoline plant at Hutchins City, Tex., in the Panhandle area. T plant, which is located in NE Secti 20, Block Y, has been shut down f several weeks. The company is operati its plant in NE Section 116, Block near Carson City, Tex. This plant has capacity of 5,000 gallons daily.

### UNION INCREASES CAPACITY

The Union Oil Co. of California h increased the capacity of its Santa F Springs plant in California so that it now operating on basis of 100,000 gallo daily. It is one of the largest plan in Oklahoma. It is the oil absorpti type.

The Union now has nine plants operation in California. The total ra capacity is 261,000 gallons daily.

**35 CENTS** a line first insertion; 25c a line each additional insertion. Cash in advance.

# CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

**MAIL** your advertisement now. It will be published next week. Cash with order.

## LEASES—PRODUCTION

LEASES AND ROYALTIES

Close in to production, Sedgwick and Harvey Counties, wire or write. Southwest Investment Co., 205 Orpheum Bldg., Wichita, Kans.

ROYALTIES AND LEASES, BOUGHT AND SOLD.

25 years experience in the Mid-Continent oil fields. E. J. Davied, Fort Stockton, Texas.

WINKLER, PECOS, WARD, Loving and Reeves Counties. Leases and Royalties. Hemby & Anderson, Box 633, Pecos, Texas.

WINKLER—PECOS COUNTIES
Leases and Royalties
W. S. PATTERSON
Pecos, Texas

NO GAMBLE
BUT A SAFE INVESTMENT
THREE EX-SOLDIERS OIL GAS ROYALTY OPERATORS TRUST COMPANY. Your investment is safe-guarded against loss at all times by a guaranty mortgage bond, if you are interested in receiving further information write, Wm. J. Kline, Sec'y., 2973 Riverside Drive, Cincinnati, Ohio, or L. E. Troxel, Field Manager, Gallup, New Mexico.

BROKERS: Western Oklahoma leases, drilling blocks, royalties. Joe P. Crawford, Oklahoma City, Okla.

FOR SALE
Forty-acre lease, SE ¼ Sec. 27, Twp. 18, R. 28e, Eddy County, New Mexico, with hole drilled to about 2,350 feet. Some 10-in. and 8¼-in. casing hole. Within about 1 mile wells producing oil between 2,500 ft. and 2,800 ft.
NATIONAL SUPPLY COMPANY,
Independence, Kansas.

SOUTHEAST TEXAS LEASES
Several choice tracts in Colorado County surrounded by major companies. Commercial with four years to run. Price reasonable. Also leases and royalty along the Angelina-Caldwell Flexure. G. R. Cooper, 1609 W. Page St., Dallas, Texas.

PROMOTERS, TAKE NOTICE
Lease and shallow production for sale 7 miles West Brownwood, Texas, 3 Producing wells, 2 air key wells. Eight thousand dollars worth equipment on lease. Sixty-four acres undeveloped; all set for repressuring. Good chance for big passer in lime. Terms.
May & Garrett
Santa Anna, Texas.

ABOUT to drill 3,200-foot well, heart of famous Texas oil field, 1,000 to 5,000-barrel gushers close, geological data indicates my undrilled lease will produce equal to any; acceptable associates wanted or acreage will sell offsetting drilling tract. Write, wire or call for information that will fill all requirements of geologists, practical oil men or investors who will consider only the best.
E. L. STRATTON
2104 Fort Worth National Bank Bldg.
Fort Worth, Texas.

SOUTH WEST TEXAS MINERAL DEED on ten thousand acres. Is paying six per cent now. Surrounded by drilling wells. Is near the big fields. Is perpetual and participating. Price for one-fourth of one-eighth. 40 cts. per acre. W. E. Priddy, 1900 Tilden St., Wichita Falls, Texas.

SW ECTOR COUNTY—Buy ahead of the big play. Major Co. paid $40 leases. Royalty has sold to $100 BASE. Bargain list free. To buy or sell Tex., Okla., N. M., lands, leases or royalty write, C. H. G. Anderson, Linz Bldg., Dallas, Texas.

PRESIDENT HOOVER'S ruling over government permits expected start 100 wells drilling within 60 days in Lea, Eddy and Chaves Counties, New Mexico. We offer 2,500 acres state leases these counties at $2 to $10 per acre. Ford & Co., Dept. G2, Roswell, New Mexico.

KANSAS DRILLING BLOCK
Solid Block in Central Kansas, well located on trend. New ten year leases. This is in the play. Write or wire Box C-897, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—Leases, Oil Production, Asphalt, Limestone and Other Mineral Lands. W. P. Harley, Bowling Green, Ky.

## LEASES—PRODUCTION

720 ACRE LEASE for drilling contract, on good structure. Directly between Fluhman and Mathews Pool, Wilbarger Co., Texas. T. H. Haney, Box 103, Thalia, Texas.

DRILLING blocks, leases, royalties in Ellis, Trego, Rooks, Norton Counties. Write or wire W. J. Madden, Hays, Kansas.

LANDS, Leases, Royalties and drilling blocks in proven or unproven territories, Winkler, Pecos, Ward, Loving, Reeves, Culberson and adjoining Counties. Wire or Write.
H. F. Anthony, Anthony Bldg.,
Pecos, Texas.

FOR SALE—To oil companies, complete maps of Presidio, Jeff Davis and Brewster Counties. L. E. Weeden, Fort Davis, Texas.

LAND FOR SALE—In Jeff Davis County, Texas. Large tract, $3.50 per acre, near railroad towns, part grazing land, oil and gas found in tests close to three sides. Address Box 249, Topeka, Kans.

FEE OWNER will sell oil lease NW 7-12-2e on Lincoln-Oklahoma County line on topographical high. Major companies have adjoining leases. Also lease NW 19-11-3w. Wire or write best offer. G. A. Minnich, Carroll, Iowa.

LEA COUNTY, NEW MEXICO
Perpetual Royalties.
W. S. Patterson
Pecos, Texas

SCURRY COUNTY LEASE. 7,000 to 10,000 acres. In trend of production, on axis of anticline which major company preparing drill near my block. Price is $2.00 per acre, quick action necessary.
J. L. FERGUSON
Land—Leases—Royalties
SAN ANGELO, TEXAS.

FOR SALE—178 acres potential oil land. Gas well near. All under cultivation. $125.00 per acre cash. Address C. W. Howard, Route 1, Switch City, Ind.

OIL, wish to sell the lease and half the royalty on 40 acres 22-7-1 East, Cleveland County, Oklahoma. Center of surveyed structure by Tatum, a competent geologist of Tulsa. 609 N. Harvey, Oklahoma City, Okla.

WELL LOCATED acreage in Kansas for test well 2,600 feet. Excellent geology. M. Teller, Equity Bldg., Oklahoma City, Okla.

LOOK—640 acres of land in eastern Wyoming with prospect for oil. For sale or lease. Ernest Habegger, California, Mo.

ROYALTY AND LEASE
For Sale—Near drilling southeast of Temple, Cotton County, Oklahoma. Royalty on north half of southeast quarter, Section 19, Township 4s, Range 9w. Also unleased 40 acres, SE of NE, same section. From telegrams I get, must be some excitement down there. Am too old to go see. E. R. Young, Ridgeway, Mo.

NEW MEXICO
Well located and wildcat leases, royalties, Lea and adjoining counties. William U. Tate, Lovington, N. Mex.

30,000 ACRE Lease in Harding Co., New Mex. Will sell or make drilling contract. Have Geologist's report. Plenty of structure in sight. Also for sale or lease. 160 acres Grey Co., Texas. 1½ miles from big wells at LaFores. W. H. Woodlief, 728 N. Fillmore St., Amarillo, Texas.

TEXAS
Lands, Leases, Royalties.
DRILLING BLOCKS.
New ownership map,
Bastrop, Caldwell, Guadalupe
and Gonzales Counties area,
17×28—send $1.00.
J. S. Jones,
Telephone Building,
Luling, Tex.

SOUTHEAST NEW MEXICO, CHAVES COUNTY. Several drilling wells. Oil and gas leases covering state lands. Five years, 5 cents annual rental. Good title. $25 buys 40 acres. Monarch Investment Co., Roswell, N. Mex.

## LEASES—PRODUCTION

ATTENTION
LEASE BUYERS AND INVESTORS
We represent hundreds of California owners of New Mexico State Oil Leases in the trend of development and offer some wonderful buys in Lea, Eddy and Chaves Counties. Barnhart-Powers, 1404 Franklin St., Oakland, Calif.

CADDO COUNTY
OIL LEASES AND ROYALTIES
C. W. Ludwick
Fort Cobb, Okla.

OIL LAND FOR LEASE and drilling, located Tr. 1. N. W. ¼ Sec. 30. T. 22. R. 12. E. 160 acres, Osage County, Oklahoma. George Wagner, lease owner, 3715 Melbourne Ave., West, Cleveland, Ohio.

LEA COUNTY, NEW MEXICO. Oil and gas leases covering state lands. Title good. Forty acres $50. P. O. Box 194, Roswell, N. Mex.

## MONEY RAISING

CAPITAL SEEKERS
Will endeavor placing proposition of merit on underwriting basis. Box 44, Room 407, 26 Court Street, Brooklyn, N. Y.

FINANCE YOUR OWN project with shares bonded. Quickest, most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 136 E. 13th, Oklahoma City, Okla.

SECURITIES DISTRIBUTOR solicits inquiries from corporations interested in raising capital through marketing of corporate securities. Booklet on request. Brookworth Co., Inc., 110 East 42nd St., New York, N. Y.

LARGE CAPITAL available for loans on producing properties. Reasonable terms. Box C-821, The Oil and Gas Journal, Tulsa, Okla.

## PATENTS

OKLAHOMA MFG. and SALES CORP. having best of contacts with the oil producing and drilling industry, will buy, market, or finance patents of merit pertaining to the drilling or producing industry. All information strictly confidential. Box C-820, The Oil and Gas Journal, Tulsa, Okla.

## PATENT ATTORNEYS

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form.
Evidence of Conception
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER & ALLWINE
240 Ouray Bldg., Washington, D. C.

## ADVERTISING RATES

| | 1 Time | 2 Times | 3 Times | 1 Mo. |
|---|---|---|---|---|
| 3 lines ..... | 1.05 | 1.80 | 2.25 | 3.30 |
| 4 lines ..... | 1.40 | 2.40 | 3.40 | 4.40 |
| 5 lines ..... | 1.75 | 3.00 | 4.25 | 5.50 |
| 6 lines ..... | 2.10 | 3.60 | 5.10 | 6.60 |
| 7 lines ..... | 2.45 | 4.20 | 5.95 | 7.70 |
| 8 lines ..... | 2.80 | 4.80 | 6.80 | 8.80 |
| 9 lines ..... | 3.15 | 5.40 | 7.65 | 9.90 |
| 10 lines ..... | 3.50 | 6.00 | 8.50 | 11.00 |
| 11 lines ..... | 3.85 | 6.60 | 9.35 | 12.10 |
| 12 lines ..... | 4.20 | 7.20 | 10.20 | 13.20 |
| 13 lines ..... | 4.55 | 7.80 | 11.05 | 14.30 |
| 14 lines ..... | 4.90 | 8.40 | 11.90 | 15.40 |
| 15 lines ..... | 5.25 | 9.00 | 12.75 | 16.50 |
| 16 lines ..... | 5.60 | 9.60 | 13.60 | 17.60 |
| 17 lines ..... | 5.95 | 10.20 | 14.45 | 18.70 |
| 18 lines ..... | 6.30 | 10.80 | 15.30 | 19.80 |
| 19 lines ..... | 6.65 | 11.40 | 16.15 | 20.90 |
| 20 lines (2 in.) | 7.00 | 12.00 | 17.00 | 22.00 |

(Six words usually make a line.)

Compute white space at the above rates.

Mail your advertisement to
THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

## ROYALTIES—PRODUCTION

YATES POOL ROYALTY
One acre or more on Sections 2, 10, or 19, blk. 194, at $150 per acre. Glen Myers, San Angelo, Texas.

WESTERN OKLAHOMA royalty ahead of the drill. Inquiries invited. Joe P. Crawford, Petroleum Bldg., Oklahoma City, Okla.

ACTIVE WEST TEXAS ROYALTIES. $8 per square mile big company operation. Maps and bulletins show many fine buys. R. R. Fisk, Box 1214-B, Wichita Falls, Tex.

J. A. WOLF & COMPANY
127 N. Dearborn, Chicago, Illinois
We deal in Oklahoma Royalties exclusively.

FOR SALE—One-half royalty interest in 1,280 acres, Lea County, New Mexico, and 34,000 acres in Andrews and Gaines Counties, Texas, adjoining Lea County, at less than current prices. Dr. B. B. Ralph, 529 Highland Ave., Kansas City, Mo.

FOR $25.00 we make a PERPETUAL ROYALTY DEED direct to you for one 128th interest in the FARMERS FULL one-eighth ROYALTY, under GYPSY OIL COMPANY lease covering 80 acres, located in the big oil play of Lea County, New Mexico. Write for information. Monarch Investment Co., Roswell, New Mexico.

FOR SALE—A one-sixty-fourth royalty interest in two acres undivided inc., 640 acres, Section 33, Block 26, Winkler County, Texas. A real buy if sold at once. P. O. Box 2592, Los Angeles, Calif.

Results from consistent advertising in the right medium are accumulative. Use The Oil and Gas Journal Classified wants week after week.

SPECIALIZING in Brewster and Presidio County, Texas. OIL & GAS ROYALTY, FULL MINERAL RIGHTS & Leases.
Hudson D. Wilcox
c/o Holland Hotel
Alpine Texas.

WANTED—Royalties—leases if priced right. Also consider drilling proposition with merit. Can use production 10 barrels up. Purcell, 403 Kennedy Bldg., Tulsa, Okla.

ROYALTIES—PRODUCTION
IN POSITION TO SELL spread choice producing and prospective royalties in Mid-Continent area to extent of HALF MILLION DOLLARS. Strictly high class business proposition, replies confidential. Box C-894, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—UP-TO-DATE LIST OF OIL ROYALTY OWNERS OF OKLAHOMA PROPERTY. WRITE 1424 WEST 29TH ST., OKLAHOMA CITY, OKLA.

## RANCHES AND FARM LANDS

FOR SALE. Model cattle ranch, ON TOP OF THE OZARK MOUNTAINS. An estate of 490 acres, including two miles of White River. Highly improved; modern in every way; complete in every detail. Very productive, one-half in cultivation. Ideal all year 'round country home, Club or colony. Ten room modern house with heat, light, baths and running water. Cash or terms. No trade. Write owner, Charlie H. Clouston, Rogers, Ark.

FOR SALE—The J. L. Walton estate located two and one-half miles N.E. of Corsicana, Texas. 416½ acres, farm and pasture land. Has shallow production of 8,000 barrels annually of high gravity oil. 150 acres not under lease. No deep test ever drilled in this immediate vicinity. Family heirs have secured promise of Oil Company holding lease to sell in order that the entire 416½ acres can be sold in fee and divided among said heirs. Write or see T. J. Walton, Corsicana, Texas.

S. E. OKLAHOMA land bargains 40 to 1,000 acre tracts in coal, new oil, gas belt. $5 to $25 acre. Come investigate. John Cavanaugh, McAlester, Okla.

# Chicago Market Shows More Activity

## Refinery Stocks Stated as Being Low With More Business Being Done. Weather Favors Stronger Market for Fuels

By John B. Waldo

CHICAGO, Apr. 15.—There was more activity in the gasoline market today and while the spot demand was not large there was more business being done. The general quotation for U. S. Motor Gasoline was 7½ cents with only a small quantity available at 7⅝ cents. Some inquiry was noted for the higher gravities but the sales were not large except for the U. S. Motor gasoline. Some of the refinery offices stated that their stocks at the plant were so low that they could only take a limited amount of business and that their chief activity as to gasoline sales was the forwarding of shipping instructions on contracts and the tracing of cars. A few cars in transit were sold for resale at very close to the present refinery market. Practically all spot orders are entered for shipment within 10 days.

The kerosene demand was scattering but some refiners advanced their low price to 6⅝ cents because of light stocks while others were willing to take on a few cars at the half. The major refiners are holding for 6¾ and occasionally 6⅞ cents was asked.

There was very little demand for either distillates or gas oil. The higher gravities of fuel oils are still firmly held particularly such as are desirable for cracking stock. The heavy grades were easy in price with ample supplies offered and only a limited spot demand today.

Bright stocks were advanced 1 cent a gallon Saturday and today by western refiners, the present price of the 150-160 viscosity being 32 cents Group 3.

Clear but cool weather over the week end favored the use of the autos as well as improving the soft roads and fields so that conditions in this section are favorable to an increased consumption of both auto and tractor fuel and stronger market for at least gasoline and motor oils.

### No Accumulations of Stocks Seen

Judging from the buying done last week in this market by several of the larger jobbers, the trade has come to realize that the refining branch of the industry plans to follow the same method of operating as last season, that is, to run to known demand and not to provide largely for a possible future consumption. This means that there will be no real accumulation of stocks of gasoline.

These excessive supplies have become so burdensome that some refiners have found it to their advantage to market their surplus early in the season. The result for several years was a weakening of the market just when it should have begun to show real strength, causing a break in prices which resulted in low markets during the height of the demand.

The way to prevent this was obviously to hold runs near to the known demand and to care for any unusual demand when it arose as best possible at the time. During the midsummer of 1928 many stations were out of gasoline for a period. Much gasoline marketed was not of the true standard quality and there was a scarcity of good gasoline.

During the period of decreased consumption from November to early in March of this year, the West Texas refiners offered their product freely and at prices materially less than the prevailing Group 3 market. At times the spread was fully 1 cent a gallon.

### Price of West Texas Product Rises

Early in March, large buyers, both refiners and distributors, bought freely and the result was that the West Texas plants sold so much of their output in advance that they were able to insist on higher prices and the spread between the Group 3 and the West Texas price for U. S. Motor gasoline was gradually narrowed until the West Texas product sold at nearly as high prices based on Group 3 freights as the Oklahoma material.

There is, of course, a differential between the Group 3 and the West Texas freight costs of 5½ cents a hundredweight so that the West Texas refiner selling on a Group 3 basis does not receive as much for his gasoline even at the same prices, Group 3 basis, as does the refiner in the group. It is true that new plants have started operations in West Texas since the close of last season and that the West Texas output is certain to be larger than it was. There have been increases in the output of many refineries elsewhere, but the consumption continues to increase and the local trade at least believe that the increased demand will take up any slack caused by this increase in refining capacity.

### Market Expected to Parallel 1928

Several sales managers have expressed the opinion that the course of the gasoline market during the coming summer will rather closely parallel that of 1928. The statements of the great automobile plants show that they turned out cars at a higher rate than ever before for the first three months of the current year. In round numbers the output of cars is 25 per cent larger than last year for the same period. Some of the cars will be exported, many will replace old cars. This replacement is large.

Recently in this city dealers in autos held a bonfire on the Lake Front at which a great many of the old cars were burned. This was for the purpose of indicating both to the trade and to the owners of old cars their very small value. But it is believed that the manufacture and sale of so many new cars must result in a large increase in the number of cars registered and the demand for gasoline.

The preliminary report of the Bureau of Mines estimates the increase in the domestic demand for gasoline during 1928 as 11 per cent greater than during 1927. Early reports for the first three months of this year, it is pointed out, show that this percentage of increase is being maintained.

### Means Big Increase in Consumption

This means an increase in the domestic consumption of close to one and one-third billion gallons of gasoline and some of these oil men assert that this increase is sufficient to absorb any enlarged refining output provided the same rule is followed as was adhered to last year. They even say that the refineries should run more crude and accumulate larger stocks than last year in order that the trade and the consumers may be assured of a satisfactory quality and a full supply during the height of the touring season.

The buying last week in this market indicated that the jobbers to a large extent appreciated this condition and were buying now for a future demand. Several of the sales managers for large companies stated that they had received large orders from their customers at regular price and terms, and that they believed that such jobbers as had not already filled their tanks were doing so at the present market price, some expecting that the advance in tank car prices at the refinery would be more rapid after the first of next month than it had been so far this season.

According to these sales managers the receipt of orders for 25 and even 50 cars at the present market price for shipment within 10 days had not been an uncommon thing during the week.

### Orders Referred to Refinery

In come cases these orders were not accepted until after they had been referred to the refinery. Some jobbers who had previously filled their tanks have ordered additional quantities to replace the daily sales and keep their tanks full. Some of these jobbers have contracts for a portion of their requirements and are ordering additional quantities.

There is no means of ascertaining the total of this business but it must be large. According to all refiners, the jobbers are ordering out their full monthly quotas so that the jobbers' storage must be fairly well filled as a whole. One reason for this buying in advance of the actual needs aside from any increase in costs is the widespread belief that with stronger refining markets as evidenced by the ability of the refiners to sell at higher prices and hold their market, there is bound to come an advance in the tank wagon price.

The spot business in the market from day to day was not of real magnitude. This business also parallels to a great extent last season. It was generally expected that there would be a larger number of buyers in the spot market and that several good concerns who were large buyers under former contracts would switch to the spot market.

### Not Depending on Contracts

Some concerns which in past seasons have relied upon contracts with some refiner or more than one refiner, for the bulk of their gasoline needs are not depending on contracts for their supplies this year. In many cases, however, these companies have effected some arrangement whereby they secure their gasoline without coming into the spot market. A favored method has been through group buying. One bulk order a month cares for the needs of perhaps a dozen or more good sized organizations. The spot market is no better indication of real conditions, of the extent of the jobber demand or even of the prices paid for the bulk of the material sold than it was last year.

The prices paid by the larger buyers were the full market which beginning with a low of 7¼ cents held by the larger refiners advanced to 7⅜ cents and at the close was so close to 7½ cents that sales were made at that price and it seemed only a question of a day or so when the 7½-cent price would be the ruling figure. Buyers of single cars could secure at times a little lower figure by shopping around but as a rule the resellers asked practically the same price as the refiners and the market was firm.

### Higher Gravities Marked Up

The advance in the price of the U. S. Motor gasoline was carried through the list and the higher gravities were marked up at the same time. There was not much demand for these higher tests.

One refiner stated that he had refused an offer of 7¾ cents for 60-62 400, but other sellers still were willing to sell ordinary amounts at 7⅝ cents if necessary to secure the order, but it is just another case of early purchased material being moved on the basis of costs to the owner rather than the cost to replace that material at the present market.

Some curious examples of pricing to sell came to light last week. The city of Detroit purchased its regular million gallons of gasoline from a refinery near this city at a price that figures 6.22 cents Group 3 basis. Another rather different matter was where a marketing organization with eastern and western offices bought gasoline from a refinery near Chicago through the eastern office and let the western office have the sale of the material.

Most of the gasoline, it is stated, was moved in Indiana but the refiner finally objected and cancelled the remainder of the order. There has been some feeling out of local refinery offices by possible export buyers, but so far as known no important options were given or taken in these deals.

### Demand for Kerosene Slow

The demand for kerosene has been rather slow. Oil men in the country districts state that they are selling more gasoline than they usually do for tractor fuel as the ground is heavy this season and the gasoline gives more power than kerosene. Kerosene was offered for shipment into eastern parts of the territory at 6¼ cents, Group 3 basis. This was Pennsylvania kerosene 45 gravity which could be delivered at that price with a profit to the marketer owing to the difference in freight charges. Generally the best buyers were the larger companies with little or no kerosene output.

The jobbers seem to be sufficiently supplied, at least for their present needs. In some sections the spring plowing has an early start but has been slowed up by wet weather. While the usual asking price for 41-43 gravity was 6¾ cents some refiners would take orders for prompt shipment at 6⅝ cents and at least one on a 15 days shipping basis at 6½ cents. The market last week was a little easier but supplies are still small and there is a possibility of a belated demand although it is just a bare possibility.

Distillates were a shade more active so far as the demand is concerned. There was a return of cooler weather over practically all of the territory, cold heavy rains, storms and even snow and sleet. A few distributors ordered in cars but as for the business as a whole, it was quiet and prices were easy at unchanged quotations. There may be an occasional order for a car but this is the present outlook for the future demand.

### Expect to Buy More Cheaply

Several of the gas companies have stated that they were out of the market as they intended to draw on their tanks and reduce their stocks of gas oil. The purchasing agents also express the opinion that they will be able to buy more cheaply at that time, which they say may not be for three months. This limits the demand considerably. There was little active inquiry last week. The buyers for those companies which purchase for the monthly needs have bought for April and the only spot business was scattered cars.

The zero gas oil was in nearly the same position as distillate, occasional scattering cars making the bulk of the orders. Some dealers are holding for a premium for the zero oil while others claim that there is no real reason for the and quote the zero and the straightrun gas oil on the same basis of price. There is, however, a little more movement in the cracked than the straightrun, possibly because more of it is to be had. For the good zero gas oil the market is barely an eighth of a cent higher than for the ordinary industrial gas oil. Of course this is the ordinary dark oil, not for real straw gas oil which is scarce and insisted upon would cost more money, the flash were low and the smell sweet.

### Industrial Fuel Oils Quiet

Since the first-of-the-month orders were placed there has been little doing in industrial fuel oils or in the higher gravities which are suitable for furnace use. Much of the latter are now used for cracking stock and are in some demand for that purpose. The West Texas sellers of fuel oil have been aggressive

during the last week and some of the local refiners have met their price, an 18-22 fuel oil being sold at 47½ cents to large consumers and for resale.

These fuel oils are run from West Texas crude and possess the low cold test and the high order which is common to these fuels. Still there is no doubt that these fuels are being used to a greater and greater extent and the extension of the through rate from West Texas to much of the Indiana territory on a basis of a 4½-cent differential on heavy oils over the Group 3 rate will at least give them a wider territory on both sides of the Mississippi River.

The sales organizations for some of these Texas plants say that it is going to be of distinct advantage to them. The sales offices of one of these concerns is one of the really active spots in the oil market here right now. Several out of town oil buyers were met in one of these offices last week apparently awaiting their turn.

**Buyers Slow to Commit Themselves**

There are expired contracts on which efforts are being made for a renewal, but buyers seem in no haste to commit themselves. The end of the season for the use of oil for heating has taken a good deal of the snap out of the market.

There was a nervous feeling in the lubricating oil market and something of a flurry in bright stocks due to a persistent report that these stocks would be advanced 1 cent last week. The advance did not take place on the day for which it was predicted but it is felt it is bound to come. The motor oils this year contain more bright stocks than formerly. All cars with high-compression motors have stepped their oils up at least one grade using from 10 to 20 per cent more bright stocks.

In seeking for a source of supply one of the large refining organizations has produced a blending oil from an asphalt base crude for which the claim is made that it can be blended with an equal quantity of bright stocks without any decrease in the good qualities of the motor oil. The cost of this blending oil is stated to be around 20 cents against a price for Mid-Continent bright stocks of 31 cents and for Pennsylvania bright stocks of 50 cents asked at this time. There is an active demand for both motor and for industrial oils and prices are firm, even neutrals holding their own or a little better.

**No Change in Tank Wagon Prices**

There was no change in tank wagon prices over Standard Oil Co. of Indiana territory last week. As has been stated there is a strong feeling that the major distributors in this territory are bound to advance their tank wagon schedule shortly. This rumor started with the increase in the kerosene tank wagon price over the territory, and has continued to grow with the advance in the tank car prices. Many say that when the refinery market is established at 7½ cents, the tank wagon list will be increased 1 cent. Others more conservative say that it was not until the tank car price was at 8 cents last year that the tank wagon price advanced.

The market is much more uniform than it was a year ago and while price-cutting has not been done away with it has been reduced.

## EASTERN GASOLINE MARKET IMPROVED

(Continued from Page 137)

is still centering on the cheaper selections.

**Export Markets**

More interest has been shown in offerings of gasoline for export this week, and refiners believe that the long-deferred spring movement of motor fuel into foreign channels is at last under way. A cargo of 3,800 tons of bulk navy was booked for shipment to France out of Philadelphia this week, on the basis of 8½ cents per gallon, f.o.b. Gulf, with differential for Philadelphia lading. An inquiry for a cargo of 6,500 tons of four grades of gasoline for shipment to Philadelphia is in the market and is expected to be fixed shortly. A cargo of 10,000 tons of California 400 endpoint gasoline was booked for shipment to the United Kingdom this week at 8¾ cents. It is understood that further inquiries for California gasoline for shipment to the United Kingdom are in the market.

Bunker fuel oil has strengthened further at the Gulf, it is reported, where buyers for export are currently being quoted 80 cents per barrel, 5 cents over the recent asking price, and 7 cents up from the level at which was booked a fortnight ago.

Lubricating oil has continued to move in substantial volume into export markets, and prices are strong and advancing. Export operators are still in the market for stocks in large quantities, and are experiencing difficulty in locating wanted grades.

Sales of kerosene for shipment abroad have been along routine lines throughout the entire week, with operators taking stocks only as required. There are no price changes on bulk stocks, and quotations on cased illuminating oil continue withdrawn.

Wax sales for shipment abroad have shown little improvement this week. Volume is relatively light, and export buyers are shopping the market thoroughly before placing business, generally underbidding by an eighth to a quarter when coming in with a firm inquiry.

Other refined products have been rather slow, in so far as export sales are concerned.

**Petroleum Exports**

The following table shows principal exports of petroleum and refined petroleum products from New York during the past three weeks (all figures in gallons unless otherwise noted):

| | Week ended | | |
|---|---|---|---|
| | Apr. 6 | Mar. 30 | Mar. 23 |
| Gasoline | 854,900 | 513,700 | 215,000 |
| Naphtha | 1,833,200 | 1,125,900 | 287,500 |
| Kerosene | 1,253,400 | 695,400 | 48,000 |
| Fuel oil | 126,900 | 261,000 | 7,000 |
| Lub. oil | 974,700 | 2,796,100 | 1,168,500 |
| Pet., ref. | 2,396,500 | 2,162,400 | 376,000 |
| | Pounds | | |
| Petrolatum | | | 32,000 |
| Paraffin wax | 1,498,200 | 1,007,800 | 1,458,300 |
| Refined | | | |
| Scale | 335,000 | 882,600 | 254,500 |
| Lub. grease | 651,800 | 817,800 | 1,003,800 |

**Imports**

Imports of crude and refined oils at the principal United States ports for the week ended April 6 totaled 1,815,000 bbls., a daily average of 259,286 bbls., compared with 2,620,000 bbls., a daily average of 374,285 bbls. for the week ended March 30. Details follow:

(Barrels of 42 gallons)

| | Bbls. |
|---|---|
| At Atlantic Coast ports— | |
| Baltimore | 208,000 |
| Boston | 73,000 |
| New York | 827,000 |
| Philadelphia | 354,000 |
| Others | 84,000 |
| Total | 1,546,000 |
| Daily average | 220,857 |
| At Gulf Coast ports— | |
| Galveston district | 139,000 |
| New Orleans and Baton Rouge | 65,000 |
| Port Arthur and Sabine district | 65,000 |
| Total | 269,000 |
| Daily average | 38,429 |
| At all United States ports— | |
| Total | 1,815,000 |
| Daily average | 259,286 |

Included in the receipts of crude oil at New York for the week were the following shipments:

To Gulf Refining Co., 20,000 bbls. on the Paraguana from Las Piedras; 115,500 bbls. on the Gulfbird from Las Piedras; 65,000 bbls. on the Beta from Las Piedras; 65,000 bbls. on the Belridge from Las Piedras; and 95,000 bbls. on the Agwihavre from Las Piedras.

To Standard Oil Co. of New Jersey, 118,000 bbls. on the Vancolite from Mamomal.

To Standard Oil Co. of New York, 78,700 bbls. of refined products from La Brea.

To Utility Oil Co., 70,000 bbls. on the Papoose from Trinidad.

To Mexican Petroleum Corp., 67,100 bbls. on the S. M. Spaulding from Aruba and 64,200 bbls. on the Cerro Ebano from Aruba.

**California Oil Receipts**

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended April 6 totaled 525,000 bbls., a daily average of 75,000 bbls., against 862,000 bbls., a daily average of 123,143 bbls. for the week ended March 30. Details follow:

(Barrels of 42 gallons)

| | Bbls. |
|---|---|
| At Atlantic Coast ports— | |
| Baltimore | 132,000 |
| New York | 227,000 |
| Others | 166,000 |
| Total | 525,000 |
| Daily average | 75,000 |

There were no receipts of California crude or refined at Gulf ports.

Distribution of total California oil receipts is as follows:

| | Bbls. |
|---|---|
| Crude | 75,000 |
| Gasoline | 242,000 |
| Kerosene distillate | 70,000 |
| Gas oil | 88,000 |
| Fuel oil | 50,000 |

With the East Coast gasoline market working into slightly better position, more interest is being shown in California motor fuel for shipment East. Thus far, however, the price basis in the Atlantic Coast territory has not shown sufficient improvement to make California gasoline an attractive buy in the East at current asking prices of Pacific Coast refiners. Large integrated companies with California connections are bringing California U. S. Motor east in fair volume. Some of this motor fuel is commanding a quarter cent premium higher, while in some instances the Pacific Coast product is being sold on a par with East Coast gasoline.

## GULF COAST

(Continued from Page 136)

derrick. Humphreys Corp.'s No. 1 Bryan, Bryan Mound, is drilling shale at 3,032 feet.

Colorado County—Humble Oil & Refining Co. has abandoned No. 1 Brinkley, Altair district, in shale at 953 feet. Shell Petroleum Corp.'s No. 1 Neuendorff, Bernardo district, has been abandoned at 1,500 feet.

Fort Bend County—South Texas Petroleum Co.'s No. 1 Hartfield, Needville, tested salt water in heaving shale at 6,889 feet. It set 28 joints of screen 80 feet off bottom. Gulf Production Co.'s 11 Trone, Long Point, is in lime and sulphur at 942-1,038 feet.

Harris County—Humble Oil & Refining Co.'s No. 1 Irvin, second Mykawa deep test, has been spudded. Humble's No. 5 Warren, Hockley, is drilling shale and lime at 3,396 feet. Little York Oil Co.'s No. 1 Davis, Little York district, has been shut down in shale at 3,030 feet. Paxton and associates' No. 1 Brown, Wooster, is drilling gumbo at 900 feet.

Chambers County—Pure Oil Co. has made location for two more tests on the Lost Lake Dome. No. 2 Mayes, one of these locations, 750 feet southwest of No. 1 Mayes, completed several weeks ago as a gas well, is rigged up. No. 3 Mayes, 400 feet east of No. 1 Mayes, had built derrick but this was blown down in last week's storm.

Jackson County—The Texas Company's No. 1 Moore, D.&G.N. Survey No. 311, 16½ miles north of Edna, is drilling shale and lime at 3,585 feet.

Jefferson County — Gulf Production Co.'s No. 6-A Bordages, Fannette, is drilling shale and lime at 4,979 feet. No. 7 Bordages, Fannette, is coring sand at 4,504 feet and No. 11 Thomas is drilling rock at 3,846 feet. Shell Petroleum Corp. has rigged up for No. 1 Heisig, Hampshire, T.&N.O. Survey No. 86. The Texas Company's No. 1 Pipkin, Big Hill is drilling sticky shale at 5,688 feet. Yount Lee Oil Co.'s No. 1 Nona Mills, Hillebrandt Survey, is drilling shale and lime at 5,312 feet. Vacuum Oil Co. still is building road to its location for No. 1 Herbert-Broussard, T.&N.O. Survey No. 208.

Liberty County—Humble Oil & Refining Co.'s No. 4 Sterling, Moss Bluff, is drilling hard sand and pyrites at 2,867 feet. The Texas Company's No. 2 Davis, Davis Hill, is drilling sand and shale at 3,882 feet. Union Exploration Co.'s No. 2 Esperson, Sheeks, is drilling sticky shale at 5,242 feet.

Matagorda County—Crossland and associates' No. 1 Hawkins, Shepherds Mott, is drilling sand, shale and lime at 4,388 feet.

Orange County—The Texas Company's No. 1 Kuhn, Terry Dome prospect, is drilling shale at 2,530 feet.

Waller County—The Texas Company's No. 1 Young is drilling shale and lime at 2,188 feet.

Wharton County—Hearte and associates No. 1 Brown, south of El Campo, is drilling gumbo and lime at 2,243 feet.

**South Louisiana**

Cameron Parish — Shell Petroleum Corp.'s No. 6 Watkins, Black Bayou, is drilling hard sand and lime at 4,450 feet. No. 9 Watkins is waiting cement to set at 981 feet. The Texas Company's No. 3-A Calcasieu Lake, Calcasieu Lake Dome, has a derrick up.

Iberville Parish — Shell Petroleum Corp.'s No. 3 Wilbert, Whitecastle, is coring sandy shale at 3,988 feet. Standard Oil Co.'s No. 2 Wilbert, Bayou Blue, is drilling at 175 feet. This company's No. 1 Schwing, Bayou Blue, is in sandy shale and lime at 4,091 feet.

St. Landry Parish—The Texas Company's No. 1 Botney Bay, Port Barre, has plugged to 3,756 feet, where it will be retested. Gulf Refining Co.'s No. 1 Gaudet, a half mile north of The Texas Company's test, is rigged up.

St. Martin Parish—Ohio Oil Co.'s No. 3 Martin, Hager Dome, tested salt water with a showing of oil at 4,490 feet, is standing. The Texas Company's No. 1 fee, same dome, is drilling at 1,247 feet. This company has locations for Nos. 2 and 3 fee.

Terrebonne Parish—The Texas Company has a derrick up for No. 1-A Timbalier Bay. It is moving in material to its location for No. 1-B Lake Pelto. No. 1 Lake Barre is drilling at 712 feet. No. 1-B Bay Coon Road is rigging up. No. 1-A Dog Lake Bayou is drilling at 205 feet. No. 1-B Four Isle Bayou is moving in.

## KANSAS FIELDS

(Continued from Page 44)

was completed for 1,412 bbls. in sand at 3,377-83 feet. Skelly Oil Co. and Davis and others' No. 3 Wilson, NE cor. SE NE NE, Section 1-26-1w, made 250 bbls. from sand at 3,406-3,410 feet. Phillips Petroleum Co.'s No. 3 Difford, SE cor. NE NE NE, Section 1-26-1w, produced 275 bbls. from sand at 3,381-92 feet. No. 2 Difford, NE cor. Section 1-26-1w, was completed for 220 bbls. in sand at 3,382-90 feet. Barnsdall Oil Co.'s No. 1 Faber, SW cor. NW, Section 6-27-1w, is dry and abandoned at 3,950 feet. Shawver and others' No. 1 Reeves, SE cor. SW SE, Section 19-28-1, has been abandoned at 3,633 feet.

**Stevens County**

McKenna and others' No. 1 Hamm, SE cor. NE, Section 10-33-38w, has been completed for 8,000,000 feet of gas in sand at 2,592-2,636 feet.

**Sumner County**

Marland Oil Co. is building the rig for No. 2 Spence, NE cor. SE NE, Section 21-34-2.

**Woodson County**

Peerless Oil Co.'s No. 11 Lauber, CWL NE NE, Section 23-26-14, made 200 bbls. from sand at 1,203-77 feet. No. 12 Lauber, CNL NE NE, Section 23-26-14, is dry and abandoned at 1,302 feet.

### LEE WILSON DIES

Lee Wilson, 51, president of the Eureka Drilling Co. and Wichita Falls oil operator, died suddenly following a heart attack.

### CHARLES WALLACE SHAW DIES

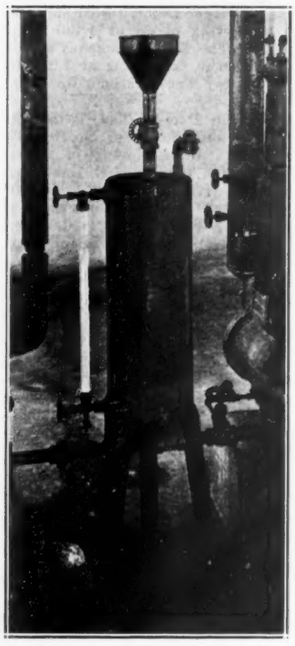
CHATHAM, Ontario, April 13.—Charles Wallace Shaw died recently at Chatham. A driller by trade, he had worked in New Mexico, Pennsylvania, Oklahoma and Kansas and was for some years with the Midwest Refining Co. in Wyoming and New Mexico. For 11 years he was at Oil Springs, Ontario, and for the past 5 years with the Union Natural Gas Co. at Chatham.

# Practical Suggestions in Refining

By W. T. Ziegenhain

## Supply Tank for Water Softening Compound Simple

When the Burford Oil Co. started operating in Pecos, Tex., it was faced with having to use well water of 180 to 240 grain hardness in the boilers and because of the nature of the hardness, it was necessary to use vegetable compounds as the softening medium. The apparatus developed to feed and measure the amount of compound going into the boiler feed water is shown in the picture below and simply consists of a 3-foot length of 8-inch iron pipe closed at the top and bottom with a welded plate and equipped with a gauge glass. The bottom plate was bored for a 1-inch outlet and a pipe branches from here to the inlet of the two boiler feed pumps. The upper plate was also cut for a 1-inch opening and a



collar welded on to accommodate the short nipple riser holding the funnel. A gauge glass shows the level of the fluid in the supply tank.

**Controls Supply**

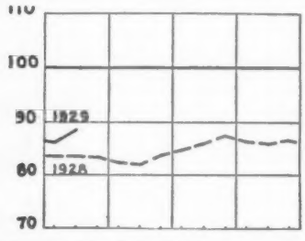
In operation, the concentrated softening compound is poured into the tank, through the funnel and when filled, the valve in the riser is closed, except to allow a small amount of air to come into the system as the compound is used. The outlet or the supply of the compound is regulated by the two valves, one on each line going to the boiler feed pumps. When the pump operates it pulls on the supply line and a slight opening of the valve in question allows the compound to be pulled into the pump with the water where the two are thoroughly mixed and the reaction or coagulation of the vegetable compound is completed in the boiler. Knowing the capacity and the volume of compound for each level in the supply tank as shown by the gauge glass, the flow of the compound can be regulated in proportion to the amount of raw water being fed into the boiler. A preliminary laboratory determination shows how much of the compound is needed and the boiler house operator can easily control the feed to meet this requirement.

The water is partly softened in a preheater but the great bulk of the sludge precipitating out of the water collects in the boiler itself. A steam level blow-off system is installed in the boilers and a continuous stream of water is taken off at the point near the steaming level where the concentration of the sludge is the greatest. This system allows the plant to operate efficiently over relatively long periods. The floor of the boiler is blown down once a week.

This system accommodates two 150-horsepower boilers supplying steam for the operation of the entire plant. The size of the supply tank could be altered in proportion were this principle to be applied to other installations.

## REFINERY EMPLOYMENT SHOWS LARGE INCREASE

On March 1 refinery employment reached a high point and slightly exceeded any period over the past two years. This is probably due in a great measure to the large number of construction jobs in progress. With these jobs completed it is very likely the high rate of refinery employment will be maintained over the year as production and consumption of the refinery products increases. Accompanying is a curve showing the number employed during 1928




and up to March 1 of this year, according to the United States Department of Commerce.

Comparing February with January an improvement in the number of men of 2.6 per cent is shown for February and the amount of the pay roll increased 4.7 per cent. Making the comparison using February, 1928, as a basis, there is an improvement of 4.8 per cent in the number of men employed and the pay roll increase amounts to 5.5 per cent.

## SLOW HEATING NOT PATENTABLE

WASHINGTON, D. C., Apr. 15.—The board of appeals of the United States Patent Office has rendered a decision holding that slow heating of oil is old in a fractional distillation process. This is the case of ex parte John Primrose who was granted patent No. 1,707,369 on April 2 for a method of fractional distillation. The board of appeals affirmed the rejection of the examiner, claims one and two of this patent as being unpatentable over references.

It was held that the Primrose method of distilling oil, in which the heat applied and the velocity of oil so regulated that the temperature of the oil gradually raised without heating it to cracking temperature was anticipated by prior patents.

## CODE FOR PRESSURE PIPING

A preliminary draft of the code of pressure piping, as sponsored by the American Society of Mechanical Engineers, has been prepared and is being distributed among refiners for criticism. When completed and approved it will include a systematic classification of material specifications and standard dimensions for pipes, fittings and valves together with a general discussion of the requirements for hangars, coverings inspections and tests.

## Several Methods Being Used to Lengthen Life Of Steel Fire Tubing

In a study of furnace tube failures, particularly in cases where the tubes were used in stills running high sulphur content oils, it was found the corrosion occurred principally near the ends of the tubes. Several means of equalizing this condition with respect to the normal life of the balance of the tube are being practiced at very little additional cost, with the result the life of the tube installation has been greatly prolonged. Special alloys and extra heavy tubes have aided in the solution of the general problem of lengthening the life of the tubes but recently some refiners have been using tubes which have been originally made too long in the mill and are then heated and pressed on the ends to proper length allowing the metal to build up a thick wall. This thick wall extends from 1 to 2 feet in from each end and is from one-sixteenth to one-fourth inch thicker than the rest of the tube. With all other factors equal, the life of such a tube is increased about in proportion to its increased thickness and if the corrosion continues to be most noticeable at the ends, such an installation may easily double the life of the tubes and with a very little additional cost.

A less proven method of prolonging the life of the tubes is to coat the inside of the ends of the tube with a cement wash similar to that given the inside of cracking chambers as developed by the Shell Petroleum Co. at Wood River, Ill., and the Universal Oil Products Co., and described in The Oil and Gas Journal on page 55 of the December 6, 1928, issue. This coating must necessarily be thin and it has the disadvantage of restricting the flow of the oil, is difficult to apply and it is removed every time the tubes are cleaned with the present types of power cleaning tools.

Cement has been successfully used to line the inside of return bends and to protect the tube ends where they are rolled and beaded over the tube sheet. When expanding the tubes into the sheet and then rolling them and beading them, the metal is pounded relatively thin and corrosive oils quickly eat through the tubes at this point. A one-quarter-inch or one-half-inch coating of ordinary 3-and-1 mix of fine sand and 24-hour ordinary cement over this portion of the tube and return bend has cut down tube failures materially.

## THIRD ANNUAL SAFETY MEETING IS ANNOUNCED

The third annual central states safety congress will be held in Kansas City, Mo., on April 30 and May 1 at the President Hotel. This is expected to be the largest meeting of the association for the year and several important papers are to be delivered on safety in refinery and marketing work.

A paper on "Controlling Accidents in Refineries" by L. D. Palmer, safety director of the Standard Oil Co.'s plant at Wood River, Ill., will be read followed by a paper by W. H. Knapp, district manager for the Skelly Oil Co. of Kansas City, Mo., on "The Driving Problems of a Truck Salesman." Another paper on safety in marketing will be delivered by Carl C. Allenback of the Cities Service Co. of Chicago on "Safety in Gasoline Service Station Operation."

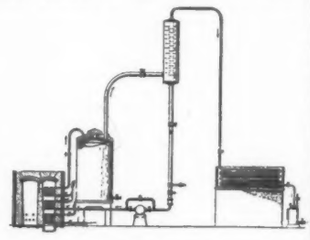
A greater general interest in the industrial safety movement is expected as a result of the coming series of radio talks to be broadcast over the N.B.C. chain starting Saturday evening, April 20 at 8 o'clock central standard time, when Charles M. Schwab, chairman of the board of the Bethlehem Steel Corp. will discuss "Safety, a Factor in Industry." These will be continued weekly and a program including talks by Louis F. Butler, president of the Travelers' Insurance Co.; P. R. Crowley, president of the New York Central Railroad; Col. Robert P. Lamont, secretary of Commerce; James J. Davis, secretary of labor, and others may be heard.

## Recent Patents

### CRACK KEROSENE AND FUEL OIL SEPARATELY

1,705,181. Method of Hydrocarbon-Oil Conversion. Gustav Egloff, Chicago, Ill., assignor to Universal Oil Products Company, Chicago, Ill., a Corporation of South Dakota. Filed Dec. 4, 1925. Serial No. 73,256. 4 Claims. (Cl. 196—50.)

1. A process of hydrocarbon oil conversion, consisting in simulataneously subjecting fuel oil bodies and kerosene-like bodies to the action of heat in



separate heating elements, in discharging these heated bodies into an expansion zone common to both, in removing vapors therefrom, in dephlegmating said vapors in returning and subjecting the reflux condensate to heat in a separate heating element and discharging said reflux condensate to said common expansion zone and in maintaining superatmospheric pressure on the oil and vapors under treatment.

### DILUTE STOCK TO TREAT

1,668,313. Manufacture of Lubricating Oils. Frank W. Hall, Port Arthur, Tex., assignor, by mesne assignments, to The Texas Company, New York, N. Y., a corporation of Delaware. Filed October 5, 1923. Serial No. 666,700. Three claims. (Cl. 196—34.)

3. In the manufacture of cylinder [oil] the process which comprises treating cylinder stock with sulphuric acid, mixing the treated oil with a lighter petroleum oil and then allowing the acid sludge materials to settle out from the mixture.

### REMOVE SULPHUR WITH DRYING OIL

1,703,616. Desulphurization of Mineral Oils. Gustav Egloff, Chicago, Ill., assignor to Universal Oil Products Co., Chicago, Ill., a corporation of South Dakota. Filed March 17, 1926. Serial No. 95,499. 2 Claims. (Cl. 196—24.)

1. A process for treating cracked distillates to remove sulphur compounds therefrom comprising commingling with the cracked distillates a quantity of drying oil, subjecting the resulting mixture to a temperature sufficiently high to cause a rapid combination between the drying oil and the sulphur compounds, subjecting the mixture to distillation under a superatmospheric pressure and recovering the overhead product formed during such distillation.

## SUBSTITUTE FOR BLAU GAS FROM RESIDUE GAS

(Continued from Page 138)

gas from which the natural gasoline is made, indicated that the gas contained approximately 76 per cent methane and 20 per cent of ethane and heavier hydrocarbons such as butane, propane, hexane, etc. During the process of absorption of the gas in activated charcoal practically all of the heavier hydrocarbons with some of the ethane are removed from the gas and are recovered as natural gasoline.

The vapors evolved—the accumulator and storage tanks, together with the residue gas which remains in the absorbers after the absorption period forms a by-product plant gas which is ordinarily recompressed and returned to the main line. A study of this by-product gas indicated that the ethane content was relatively high and of a sufficient quantity to be separated and purified by fractionation.

**Blau Gas**

During the time that this investigation was being carried on, the early summer of 1928, the Zeppelin company appealed to the United States Navy Department for assistance and co-operation in providing a gaseous fuel to refuel the Graf Zeppelin for its return flight from the United States to Germany. The original fuel with which the Graf Zeppelin was provided during its initial flight to the United States was "Blau gas," an artificial gas made by cracking crude oil. This had approximately the same weight as air and was carried under a slight pressure as a gas in balloonettes located under the inflating gas cells. The requirements for a new supply of fuel gas to be taken on in the United States called for a gas of the same specific gravity and of the same, or greater, calorific value than the "Blau gas." Ethane gas with a specific gravity of 1.038 and approximately 1,763 British thermal units per cubic foot met these specifications and since it occurred to a considerable extent the natural gas of the United States was selected as the fuel gas to replace the "Blau gas" for the return flight of the Graf Zeppelin.

When the Navy Department received the information regarding specifications for the special fuel and the request from the Zeppelin company that the gas be supplied and on hand at Lakehurst, N. J., awaiting the arrival of the airship, they immediately communicated with all sources of supply. Since even the development of the "Blau gas" by the Germans for use in the Zeppelin was difficult, members of the Navy Department realized that securing and supplying a sufficient amount of a special gas to satisfactorily replace the German gas would also be difficult. From among the number of possible sources only one organization was found which was willing to undertake the development, manufacture and delivery of 1,000,000 feet of the special gas within the short period of time allowed them. This organization was the Kentucky Oxygen-Hydrogen Co. of Louisville, Ky.

Assisted by the information concerning the by-product natural gas available at Winchester, Ky., and the co-operation of the Louisville Gas & Electric Co., the Kentucky Oxygen-Hydrogen Co. accepted the contract and agreed to furnish the gas delivered at Lakehurst within three months, or on or before October 1.

**Special Equipment**

The manufacture of this gas from the gas available at Winchester, Ky., required the use of special fractionating equipment which would separate the desired gas, ethane, from the undesirable constituents. R. R. Bottoms, director of research for the Kentucky Oxygen-Hydrogen Co. and an authority on the design and operation of fractionating equipment for the separation and purification of helium and liquefied air products, designed the necessary equipment and under his direction it was rapidly constructed and installed in a plant at Winchester, Ky. The principal equipment of the plant consisted of the fractionating column, heat interchangers, high pressure gas compressor, cylinder loading rack equipment and gravity testing apparatus. The figure shows a diagrammatic arrangement of the fractionating column and heat interchanger together with the direction of flow of the raw gas to the finished product.

The by-product gas from the gasoline plant was piped under 200 pounds gauge pressure to the fuel gas plant approximately one-half mile away. The gas was first treated to remove all traces of moisture and then passed into coils in the base of the column to furnish the heat required in the re-boiler. The gas then passed through heat interchangers, cooled by waste gas from the column, and then into the central part of the bubble tray section of the column. The gas entered the feed inlet of the column at a temperature of approximately zero degrees Fahrenheit and as a mixture of liquid and vapor. Within the bubble section of the column the liquid consisting of propane and butane, descended through the bubble trays and accumulated in the reboiler while ethane and methane ascended the column and partially condensed in the reflux condenser.

**Low Temperature**

Very low temperatures of approximately 40 degrees Fahrenheit were maintained in the reflux condenser by expanding ethane from 200 pounds to 15 pounds gauge in the lower section and methane from 200 pounds to 10 pounds gauge in the upper section. The gas consisting principally of ethane and designated as "Kenogen" was removed from the column from the expansion chamber of the lower section of the reflux condenser and compressed.

The compression was done in a four stage compressor which boosted the pressure from 15 to 2,000 pounds, the pressure required for loading the cylinders. The cylinders used for gas containers were high pressure hydrogen cylinders of approximately 2.5 cubic feet capacity. Under 2,000 pounds pressure the gas was liquefied and the contents of each cylinder were equivalent to approximately 340 cubic feet of gas. A total of 2,700 of these cylinders was filled and loaded into cars for shipment to Lakehurst to complete the order in record time. Since the isolation of pure ethane was impossible by the use of a single column, small quantities of methane or propane were added as needed to keep the gravity of the gas a constant value.

## BREAKING IN THE PETROLEUM ENGINEER

(Continued from Page 30)

or less in touch with practically all of our graduates of recent years. From time to time, when opportunities for positions are made known to us, we make an effort to acquaint those of our graduates desiring to make a change in employment with such opportunities.

**Demand Greater Than Supply**

"There has always been a greater demand for our graduates than we have been able to supply and it is our impression that the industry could readily absorb a considerably greater number of college graduates trained in petroleum production engineering than are now available."

"The Engineer and His Preparation," a booklet issued by the Agricultural and Mechanical College of Texas, has the following to say concerning the earnings of engineering graduates:

"The prospective engineering student is usually interested in the compensation which he may expect after he graduates. In any discussion of this subject, it must be realized that in engineering, as in every other profession, the degree of success or failure depends not only on the training which a man receives but that it is determined to a very large extent by personal characteristics of the individual; one man may make an outstanding success of a profession in which another is a failure. Engineering offers fewer opportunities for large income perhaps than some other lines of endeavor, but there are compensations such as steadiness of employment and advancement, and freedom from worry over fluctuations in income.

"Engineering requires the exercise of both knowledge and judgment. The college education gives the foundation of the knowledge and aids in the accumulation of experience from which judgment may be developed. The young engineering graduate will expect to begin his engineering experience in a subordinate position. His pay at first will be little more than enough to defray his living expenses, averaging around $125 a month.

**Salary Should Rise With Experience**

"As his experience increases his compensation should likewise increase. Perhaps the best idea of the compensation which he may expect to receive is indicated by the earnings of engineering graduates who are now following their professions.

"The most recent study of this subject has been made by the Society for the Promotion of Engineering Education. This society collected data on over 5,000 graduates of the principal engineering colleges of the country, this college being among those included. The figures were presented in the form of median annual earnings, the median earning being that value which has as many individuals earning a higher salary as there are earning a lower. Coincident with this national survey, and in fact as a part of it, a similar study was made of the earnings of certain typical classes of engineering graduates of the Agricultural and Mechanical College of Texas. The results check so closely with those obtained from the more comprehensive survey of the Society for the Promotion of Engineering Education that the results reported by the latter organization are quoted as being entirely typical. These median annual earnings are as follows:

"At start, $1,476; 1 year after graduation, $1,800; 2 years, $2,100; 3 years, $2,200; 5 years, $2,860; 10 years, $4,000; 15 years, $5,000; 20 years, $5,500; 30 years, $7,500."

## OIL IS ASSURED FOR BURNERS BEING BUILT

(Continued from Page 38)

adjust its merchandising policy to conform.

Of outstanding importance in considering the supply of petroleum and the ability of the petroleum industry to meet the growth of the demand for oil for heating purposes, are the counteracting technical developments such as the substitution of the Diesel engine for steam boiler and steam engine in marine, rail and industrial service, and the increased efficiency of automobile engines and automobile fuels.

The matter of reasonable assurance as to petroleum supply is rightfully one of major importance to the oil burner industry. The matter of developing the market for domestic heating oil is rightfully one of real importance to the oil industry. But you are concerned, as is the oil industry, not merely with the question of the physical supply of oil. And the question, namely, what petroleum resources will be available in the future for house heating, cannot be positively answered in terms of physical supply. The problem actually is rather one of economics, running the whole range of costs, economies and relative convenience of coal, petroleum and motor fuel, and all substitutes therefor.

In view of the assurances of an adequate furnace oil supply that have developed comparatively recently, it might be well to sound a note of warning against impatience. Much is being accomplished in working out co-operatively, and otherwise, problems affecting both industries. The oil industry is greatly concerned, and actively engaged, in a movement for conservation to insure a steady and uninterrupted supply for future essential uses. All users of petroleum products, including your customers, are vitally interested and affected, and conservation means not only the keeping underground of currently unneeded oil, but also the most efficient use of the oil.

The national welfare and your welfare insistently demands effective protection of the vital national interest in our irreplacable domestic petroleum resources.

If we are to assume that oil for household and commercial heating is a superior use of the product—which is for the consumer to say—and thus must take its place with gasoline in the scheme of modern life, the oil heating industry, in view of the fact that oil is an irreplaceable resource and must be conserved, must be forever watchful to procure the thoroughness and perfection of its installation and the maximum efficient performance of its equipment.

**Prospect for Oil**

I have recalled to your mind the old days when you gentlemen desired certain assurances from the oil industry. Forecasts based on a natural resource, the extent of which is imperfectly known, are always subject to correction. Certainly you and we are justified in the impression that the oil for domestic heating purposes is now in plentiful supply and probably will be for some time and that any apparatus now built will live its useful life before there would be any basic changes in the situation. But I cannot say, and I am sure that no one else can, that over any long period of time to come there will be an ample supply of burner oil for domestic and commercial burners at any fixed price. The one important fact that you have to consider, both in relation to the problem of oil conservation and the logical expansion of your business, is, to my mind, that oil for heating homes is bringing convenience and comfort to the householder such as the householder cannot obtain in any other way, with the possible exception of gas installations, and, therefore, that the burner should not be sold to the householder on the basis of fuel price competition with coal.

In other words, there will be adequate future supplies of furnace oil at a reasonable price but that price may, or may not, always be cheaper than coal. But, after all, is not the comparison of coal and oil in this connection not unlike comparing hay and gasoline. Coal and oil heat the home. There the comparison ends. Both hay and gasoline feed agencies of propulsion—one the horse, the other the internal combustion engine—but the gasoline engine gets you there faster, does more work for you, makes for more all-around comfort and convenience than that fast vanishing animal, the horse. Not many householders now own horses.

## NO WATER IN THE HOT-WATER PROCESS

(Continued from Page 30)

salable. There was a large amount of waste in this method too. Operators either had to burn the b.s. which remained or turn it into some slough or small stream, thereby involving fire hazards and sometimes inviting litigation through claims for damages.

**Process More Economical**

It is said for the "hot-water" method that the waste is negligible. To begin with, it is pointed out that the breaking-down process is effected more thoroughly and economically through maintenance automatically of a proper temperature and through rerunning of any part of the fluid that has not been subjected to sufficient heat on its first journey through the coil. Any "tailings" that remain may be treated with chemical preparations now on the market.

There is an important saving in gas, the users of the process say, since the gas flame, a small one, is applied directly to the oil coil instead of being used to create steam.

The hook-up shown in the accompanying picture of a "hot-water" system in operation in the Mission area has a capacity of 14,000 bbls. daily. According to the company owning the installation much of the crude entering the heating coil contains 25 per cent basic sediment. When the oil is delivered to the pipe line there is 1 per cent or less. So successful is the process of breaking down emulsions that the company is installing additional units.

# Brief Items for Petroleum Refiners

## LION OIL EXPANDS MARKETING DIVISION

Several changes and additions have been made in the marketing branch of the Lion Oil & Refining Co., particularly in the southern division. An office has been established in Nashville, Tenn., at 2420 Charlotte Pike, with Frank Reed as exclusive state representative for Tennessee. Likewise an office has been placed in Louisville, Ky., at 1120 Heyburn Building, with Ben F. Offutt as exclusive representative for Kentucky. H. A. Littlejohn has been appointed exclusive sales representative for the State of Arkansas, operating out of the sales office in El Dorado, Ark.

The Petroleum Exchange Corp., Blum Building, Chicago, has been appointed exclusive sales representative for Lion products moving into the Standard of Indiana and Standard of Ohio territories only, with the exception of road oil sales in the State of Illinois.

A considerable advertising program is anticipated to appeal direct to the jobber for tank car business. This will be under way in the near future.

## GASOLINE TAX INCREASE FOR STREETS AND PARKS

WASHINGTON, D. C., Apr. 13.—A bill will be introduced in the next session of Congress by Representative Frederick N. Zihlman of Marland, chairman of the House District Committee, providing for an increase in the gasoline tax in the District of Columbia from 2 cents to 3 cents a gallon, the object of which is to use five-sixths of the increased taxation for construction and maintenance of streets and roads in the district and the remaining one-sixth for beautifying public parks.

Mr. Zihlman does not expect to have the bill considered at the special session to assemble April 15 but to sound out opinion before the regular session in December.

"It is my hope," said Mr. Zihlman, "that the park lands acquired by the District of Columbia and now lying undeveloped will be equipped with roads and bridle paths and other improvements through the operation of such legislation."

In the last session of congress Senator Tidings of Maryland proposed a similar increase of taxation but it failed of passage.

### BUYS REFINERY SITE

CHICAGO, Apr. 13.—The Baldwin Locomotive Works has announced that the site for the new refinery of the Empire Oil & Refining Co., at East Chicago was sold to that organization for the sum of $474,216. This amount it is stated represents the charge on the books of the Baldwin Locomotive Works against the property in the balance sheet at the close of 1928. The property was acquired 17 years ago for the construction of a large locomotive plant and some construction work in the space of massive foundations was done. It was decided to confine the manufacture of locomotives to its Philadelphia plant and the East Chicago site was never used.

### BARNSDALL MOVES OFFICES

The executive offices of the marketing division of the Barnsdall Refining Co. have been moved from Kansas City, Mo., to Tulsa, the company continuing with its district office in Kansas City. M. G. Eitelman, vice president, has established his new office in Tulsa in the Petroleum Building where the general offices of the Barnsdall companies are located.

## NATIONAL PETROLEUM ASSOCIATION ANNOUNCES SEMIANNUAL PROGRAM

The National Petroleum Association will hold its semiannual meeting at the Riverside Hotel at Cambridge Springs, Pa., April 25 and 26 and a program has been arranged covering marketing and manufacturing subjects on the first day and on the second day subjects on accounting, safety and transportation will be discussed.

In addition, the problem of refinery wastes will be taken up as an informal discussion and officials of the State of Pennsylvania have been invited to explain what has been done in other industries of the state in attempting to get a complete survey of how the industrial waste may be minimized in the petroleum industry. The program as announced by Fayette B. Dow, general counsel for the association, is given below:

**PROGRAM**

**THURSDAY MORNING, APRIL 25, 1929**
**10:00 A. M.**

Address—E. M. Lyons, President, National Petroleum Association.

**Department of Trade and Commerce**

"What the Department Is Doing and What It Should Do," N. H. Weber, Trustee-in-Charge.

"Cooperation in and With the Department of Trade and Commerce," L. L. Long, Waverly Oil Works Co.

"Peaks and Valleys," N. H. Sanger, Pure Oil Co.

"More Profit From Less Waste," John D. Gill, Atlantic Refining Co.

Discussion on Better Marketing of Gasoline led by Mr. Logan and others. This will include a discussion of the A.P.I. Code of Trade Practices.

"The Tendency Toward Higher Viscosity Motor Oils and How It Affects the Refiner," Charles McLean, Canfield Oil Co.

"A Program for Marketing Kerosene," E. M. Lyons.

Report of the Treasurer.

**THURSDAY AFTERNOON, APRIL 25, 1929**
**2:00 P. M.**

**Department of Manufacture**

"Making Better Gasoline," MacLean Houston, United Refining Co.

Discussion by Messrs. Tarbox, Trustee-in-Charge, Davison, Zehrung and others.

"The Restoration of Fullers Earth," A. Mulhaupt, Jr., Kendall Refining Co.

"The Gyro Process," C. R. Wagner, Pure Oil Co.

"New Tendencies in Refining," Paul Truesdell.

"The Co-operative Engineering Program," H. A. Ross.

Group Activities—Announcement of refinery visit at plant of Standard Oil Co., Cleveland.

**THURSDAY EVENING, APRIL 25, 1929**

Fellowship Supper—F. G. Clark in charge of entertainment program.

**FRIDAY MORNING, APRIL 26, 1929**
**10:00 A. M.**

**Department of Accounting and Statistics**

"Pricing the Inventory," H. W. Ralph.

Discussion led by J. E. Johnson, M. A. Brewster, Clarence J Fox, S. J. Brill, C. J. Leroux.

**Industrial Waste**

"'Pennsylvania Plan' for Industrial Waste Problems," W. L. Stevenson, Chief Engineer, Department of Health, Commonwealth of Pennsylvania.

"Application of Pennsylvania Plan to Petroleum Refineries," C. L. Siebert, Executive Engineer, Commonwealth of Pennsylvania.

**Fire and Safety Marshals**

Address—Mr. Wotowitch, Trustee-in-Charge.

Remarks by Mr. Herbert; report of groups.

Team contest for prize offered by Mr. Keeney.

Address—Houston Dunn.

**Department of Standards and Tests**

Work on the department groups; remarks by A. W. Scott, Trustee-in-Charge.

**FRIDAY AFTERNOON, APRIL 26, 1929**
**2:00 P. M.**

**Traffic and Transportation**

Address—Willis Crane, Traffic Attorney.

Joint traffic meeting.

Trustees will meet at lunch Thursday and Friday.

### TEXAS CANADIAN ORGANIZATION

CHATHAM, Ontario, Apr. 13.—A meeting of The Texas Company of Canada's western sales organization was held recently at Calgary when plans were outlined to the field men for future sales extension.

### TIDE WATER OIL IN CANADA

CHATHAM, Ontario, Apr. 13.—The Tide Water Oil Co. of New York has entered into contracts with the Crown-Dominion Oil Co. of Hamilotn, Ontario, whereby the latter will distribute Tide Water products in Ontario. These lines have been distributed in Ontario for some years through constituent companies of the present Crown-Dominion. The Tide Water colors, orange and black, have been adopted throughout the Crown-Dominion system, which already extends through the Niagara and Toronto districts and is now expanding through western Ontario to Windsor.

### ELECTED VICE PRESIDENT

CHICAGO, Apr. 13.—The Oil Jobbers Refining Co., 4600 Ferdinand Street, this city, announces that Joseph T. Canavan has been elected vice president and treasurer. Mr. Canavan was formerly with the Calumet Refining Co. The Oil Jobbers Refining Co. is a compounder and distributor of lubricating oils.

## INDIAN TO SECURE CRUDE FROM TEXAS-EMPIRE LINE

The Indian Refining Co. has closed a contract with the Texas-Empire Pipe Line Co. calling for the delivery of 3,500 bbls. of crude oil daily at the Lawrenceville, Ill., refinery of the Indian company. The daily deliveries may be increased to 7,000 bbls. daily at the option of the purchaser.

The pipe line of the Texas-Empire Pipe Line Co. connecting the Mid-Continent Field with the Chicago area is now under construction. The line is being built primarily to serve the refinery of The Texas Company at Lockport, Ill., and the East Chicago, Ind., refinery of the Empire Oil & Refining Co. now under construction. The Indian company will build a 6-inch line connecting to the main line.

## DR. BURTON RESIGNS FROM INDIANA BOARD

CHICAGO, Ill., Apr. 15.—Dr. William H. Burton today presented his resignation as a director of the Standard Oil Co. of Indiana stating that his health was such as to prevent his performing the duties of the office. The resignation was regretfully accepted.

Bruce Johnston was elected to succeed Dr. Burton. He is a member of the law firm of Burry, Johnston, Peters and Dixon and will continue his association with his firm acting as an outside director.

## CALIFORNIA STANDARD RECEIVES LARGE TANKER

California Standard, newest and largest unit of the fleet of Standard Oil Co. of California, is on its way from Kiel, Germany, where it recently was completed. The tanker is powered with full Krupp Diesel engines, and has a carrying capacity of around 130,000 bbls. It is expected to carry gasoline for the present. This ship will be the twenty-first carrier in the fleet, which now comprises 15 steamers, 2 motorships and 3 Diesel-electrics.

### STATE CANNOT TAX EXPORTS

WASHINGTON, D. C., Apr. 15.—The Supreme Court has held that gasoline stored along the coast for export shipment cannot be taxed by the state. The case was the result of the Parish of St. Charles, Louisiana, attempting to collect a tax on the gasoline held in storage by the Carson Petroleum Corp. at St. Rose, La. The company contested the tax as an unlawful burden upon interstate and foreign commerce. It asserted that the oil taxed was en route abroad from the Mid-Continent fields in Kansas, Oklahoma and Texas, and that its tanks at St. Rose were used only to transfer it from tank cars to tank steamers. The Supreme Court of Louisiana sustained the tax, holding that the shipments came to rest in the tanks and ended their interstate journey before being shipped abroad, leaving interim during which the oil was under the taxing powers of the parish.

### DEL RIO INCREASES RUNS

NEW YORK, Apr. 13.—The Del Rio Refining Co., of Del Rio, Tex., has been awarded a contract by the Southern Pacific Railroad for supplying a minimum of 36,000 bbls. of fuel oil monthly, to supply the road's requirements between San Antonio and El Paso.

Del Rio has contracted with the Mid-Kansas Oil & Gas Co. (Ohio Oil Co.) for an increased supply of crude, and effective April 1, increased its daily refinery run from 1,800 bbls. to 2,500 bbls.

# Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

*This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.*

*Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.*

*Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.*

*All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.*

*Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.*

## PROPERTIES OF LUBRICATING STOCKS FROM DIFFERENT CRUDES

**What is the percentage of lubricating oil obtained from paraffin base, asphaltic, and mixed base crude oil? Will you furnish the points which serve to establish the source of a lubricating oil when considering gravity, cold test, flash, and viscosity?—B. C. T.**

We have no reliable survey showing the source of the lubricating oils which are on the market, but a fairly reliable estimate may be made from the analyses of the principal crudes.

The pure paraffin base crudes yield between 20 and 25 per cent lubricating oil; the asphaltic crudes may in exceptional cases show as much as 45 per cent total lubricating stock, and the mixed base oils about 20 per cent. The actual plant yields from these various oils depend upon market conditions and the type of refining. The total quantity of crude oil produced and the total quantity of lubricating oil marketed would not correspond with these percentages. Same refiners, operating with a mixed base crude, for example, have yields of lubricating oils in the neighborhood of 8 per cent.

Some experts claim that it is possible to determine the source of a lubricating oil by means of the gravity. The oils of a paraffin base origin have a comparatively high gravity, the low viscosity oils of this class may show 34 degrees gravity, and the more viscous not below 24 degrees gravity. The lubricating oils from the asphaltic and mixed base crudes may go very low in gravity, especially when the heavy viscous types are manufactured. Some lubricating oils have been made from these stocks which are almost equal to water in density.

The paraffin base oils usually have a higher pour point than the asphaltic base oils and the mixed base oils, but the mixed base oils and the paraffin base stocks may be modified in this respect by the degree to which the wax is removed in course of refining.

The flashpoint varies with the viscosity; that is, the higher viscosity is attended with the higher flash. When oils are compared on the same viscosity basis, it is usually a fact that those made from asphaltic base crudes have a lower flash than those made from a paraffin base crude. The reason for the low flash of the asphaltic type oils, as compared with the paraffin base oils, is that the distillates are obtained at a lower temperature and consequently the lighter hydrocarbons may separate at relatively low temperature, as when heated under the conditions of the flash test.

When the lubricating oil has been made from a mixed crude and has been adequately refined it is very difficult to determine with certainty just what may have been its origin.

## ENTRAINMENT IN TOWER SEPARATION

**We have a suggestion that entrainment can be much reduced in a tower if the vapors are given a whirling motion by means of suitable baffle plates. Can you tell us if there is any scientific information about this and where it can be found?—R. X.**

Towers are sometimes constructed so as to cause centrifugal movement of vapors for the purpose of reducing entrainment. There is a discussion of the subject on page 396 of Principles of Chemical Engineering, by Walker, Lewis, and McAdams, which is reproduced below:

It seems probable that the most important factor in determining entrainment is the "mass velocity" of the vapor rising from the free or disengaging surface of the liquid in the vapor, i.e., the pounds of vapor escaping through each square foot of disengaging surface per hour. The disengaging velocity allowable must, however, be determined for each specific case, as the viscosity, density, and surface tension of the liquid affect the result. Since the first and last of these vary greatly with change in temperature, hence with change in pressure, and also with concentration, it is unsafe to determine the maximum allowable disengaging velocity at other than the actual conditions to be encountered in the evaporator. A determination made experimentally in a small apparatus will, however, enable one to estimate within reasonable limits the conditions that will be encountered in practice.

To allow such particles to settle back into the evaporator, it is important to provide above the disengaging surface of the evaporator reasonable headroom in which there is no constriction of area of cross-section, thus avoiding increase in the velocity of the rising vapor. In industrial apparatus, this headroom is rarely less than 30 inches, and should be 6 to 15 feet. The disadvantages of increasing headroom comes from the increased size of the apparatus and the greater heat loss to the surroundings. Owing to the small ratio of external surface to volume in large evaporators, it is possible in such to increase the height of the vapor space without increase in percentage heat loss beyond what would be found in a small evaporator.

It is found advisable to remove the droplets which remain in the vapor by utilizing centrifugal force. This is accomplished by passing the vapor through a vessel of greatly restricted section having a circular path, with provision for draining back into the evaporator the particles impinging upon the walls. Where appreciable decrease in pressure of the vapor is allowable, it is possible to produce a high velocity through a long path, against baffle plates, and thus secure very effective removal of drops. The passage of the vapor around and against baffles followed by temporary reduction in velocity is sometimes used to separate discrete particles therefrom, but the major action is the centrifugal effect at the points of change in direction.

## CHEMISTRY OF CRUDE OIL

**Where may I obtain authentic information concerning the chemistry of crude oil?—E. T. W.**

A list of books for a petroleum reference library was published in The Oil and Gas Journal April 21, 1927, page 164, which mentions several that deal with the chemistry of the subject. Most of the books on the petroleum industry devote some space to the chemistry of oil. There are many good books on the subject.

The Chemistry of the Non-Benzenoid Hydrocarbons, by Brooks, published by Chemical Catalog Company, 19 East Fourteenth Street, New York City, is one of the most complete for information about the composition and properties of the numerous carbon compounds found in natural gas and petroleum. Some knowledge of organic chemistry is required when reading this book.

Petroleum Technology, by Gurwitch, as translated by Moore, published by D. Van Nostrand Company, New York, gives a general view of the chemistry involved and directs attention to the scientific reasons for many of the methods used in the industry.

A recent American book, Petroleum and Its Products, by Gruse, published by McGraw-Hill Book Company, New York, contains a chemical discussion of the properties, refining and utilization of petroleum.

There are numerous bulletins on the subject which have been published by the United States Bureau of Mines and the Bureau of Standards. A list of these may be obtained by addressing these Bureaus, Washington, D. C.

## BARYTES FOR MUD-LADEN FLUID

**It would be of great interest to me to get complete information on barytes used in rotary drilling; chemical composition, preparation, grinding, packing for foreign delivery. Will you be kind enough to let me know in The Oil and Gas Journal if there is any literature published on the subject either in the Journal or elsewhere?—R. C.**

Barytes, also known as barite, is the common name for barium sulphate, $BaSO_4$, a mineral substance which is found as a natural deposit in various parts of the world. It is used in the arts as a weighting material and in some paints, especially in combination with zinc oxide, where a white surface may be discolored because of the presence of sulphur in the air if a paint containing lead were used.

Barytes is used to some extent for shutting off water and a heavy flow of gas when drilling for oil. The preparation for this purpose is chiefly grinding the mineral to a very fine degree. It should be pulverized so as to pass a 200-mesh screen and if prepared to pass a 300-mesh screen it is in better condition to be mixed with the other materials. Barytes is usually shipped in strong bags in the same way that portland cement is packed.

The mud-laden fluid should be prepared on the basis of weight. This is usually done with a bucket of known volume or a gallon measure on a spring or platform scale, filling the measure brim-full. While many wells are mudded in with a mixture which weighs 10 or 12 pounds to the gallon, it is often necessary to go to 15 pounds and even higher. Portland cement will sometimes give the desired weight, but barium sulphate and iron oxide are cheap materials which are frequently chosen when weights above 12 pounds a gallon are necessary. These are kept in suspension by the addition of clay. The iron oxide is the heavier of the two, with a specific gravity approximately 5.2 and the barytes has a specific gravity about 4.2; these are equivalent to 43.3 and 35 pounds to the gallon.

A description of the method for using a mud fluid may be found in Deep Well Drilling, by Walter H. Jeffery, published by the Gulf Publishing Co., Houston, Tex.; see page 346 of the second edition. The use of iron oxide and barytes in rotary drilling is described by C. C. Thoms in The Oil and Gas Journal of February 3, 1927, page 96, Use of Heavy Minerals in Rotary Drilling Mud in Ventura Field. Another reference is Technical Paper No. 1 of the State of Louisiana Department of Conservation, Mud-Laden Fluids and Tables of Specific Gravities and Collapsing Pressures, by B. K. Stroud.

## FUEL OIL AND PULVERIZED COAL COMPARED

**I would like to obtain some data showing the comparative fuel value of powdered coal and fuel oil. Can you furnish anything on this subject?—S. B. E.**

Any comparison of fuels should be made on the basis of available heat units and the conditions for handling, including storage, and general convenience. An excellent analysis of the subject may be found in the recent article, Comparative Merits of Oil and Pulverized Coal, by Capt. Edwin Cole, which appeared in The Petroleum Times, page 235, February 9, 1929. Extracts from this article are given below:

The scientific way of arriving at the value of any fuel is to consider the thermal units instead of tons, barrels or gallons as the case may be. We find that the B.t.u. vary a great deal more for coal than for fuel oil, but if we take 19,000 B.t.u. as an average value for oil and 14,500 B.t.u. for good coal, these figures will be sufficiently accurate for comparison purposes. On a space basis, 1 ton of oil occupies 38 cubic feet, while 1 ton of coal requires 42 cubic feet.

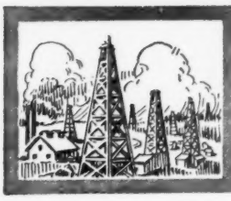
It is generally recognized that oil can be burned to give a higher efficiency than coal. Suppose the relative boiler efficiencies of oil, pulverized and hand-fired coal to be 80 per cent, 75 per cent, and 70 per cent, respectively. Reverting to the original value of the fuels and modify them for stowage and boiler efficiency we get the following:

**British Thermal Units and Percentage**

| Fuel— | Oil | Pulverized coal | Hand-fired coal |
|---|---|---|---|
| As bought ..... | 19,000 | 14,500 | 14,500 |
| | 100 | 76 | 76 |
| As stowed ..... | 19,000 | 13,120 | 13,100 |
| | 100 | 69 | 69 |
| Doing useful work. | 15,200 | 9,840 | 9,184 |
| | 80 | 52 | 48 |

If coal of an inferior quality be used we start off with a less quantity of heat units per cubic foot of space. In the case of pulverized coal additional men are required for passing the coal to the pulverizer and attending the latter. One man attending to the burning as in the case of oil. Attention is called also to the increased comfort of passengers on a ship which is fueled with oil.

The points made in this article are: Oil starts with the initial advantage of containing more B.t.u. than coal. One ton of oil occupies less space than 1 ton of coal. Higher boiler efficiencies are obtained with oil. Increase of boiler-room staff in the case of pulverized coal. For ships: Expense and time wasted in coaling as compared with oiling; valuable space necessary for the stowage of coal. Reliability of oil.



# REFINERY AND CRUDE PRICES

**Quotations on refined products are for interstate or export movement unless otherwise noted.**

## GASOLINE AND NAPHTHA

| | Apr. 16 | | Apr. 9 | | Apr. 2 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| 50-52 450 endpoint | .07 | .07¼ | .07 | .07¼ | .06¾ | .07 |
| 56-58 450 endpoint | .07 | .07¼ | .07 | .07¼ | .06¾ | .07 |
| 58-60 450 endpoint | .07 | .07¼ | .07 | .07¼ | .06¾ | .07 |
| *58-60 437 endpoint (U. S. Motor) | .0741 | | .0738 | | .0721 | |
| *60-62 437 endpoint | .0771 | | .0775 | | .0737 | |
| *60-62 400 endpoint | .0786 | | .0741 | | .0732 | |
| *64-66 375 endpoint | .0841 | | .0825 | | .08125 | |
| 68-70 360 endpoint | .08¼ | .08½ | .08¼ | .08½ | .08¼ | .08½ |
| 64-66 437 endpoint (blend) | .07½ | .07⅝ | .07½ | .07⅝ | .07½ | .07⅝ |

*Weighted average prices April 15, 8, 1, as reported by representative refiners. Sales to jobbers only.

| | | | | | | |
|---|---|---|---|---|---|---|
| **NORTH TEXAS—** | | | | | | |
| 56-58 450 endpoint | .06¾ | .07 | .06¾ | .07 | .06⅝ | .06¾ |
| 58-60 450 endpoint | .06¾ | .07 | .06¾ | .07 | .06⅝ | .06¾ |
| 58-60 437 endpoint (U. S. Motor) | .07¼ | .07⅜ | .07⅛ | .07¼ | .07 | |
| 60-62 400 endpoint | .07½ | .07⅝ | .07½ | .07⅝ | .07⅜ | .07½ |
| 64-66 390 endpoint | .07⅝ | .07¾ | .07⅝ | .07¾ | .07½ | .07⅝ |
| 64-66 375 endpoint | .07⅝ | .08 | .07¾ | .08 | .07¾ | .07⅞ |
| 68-70 360 endpoint | .08¼ | .08¼ | .08⅛ | .08¼ | .08⅛ | .08¼ |
| 64-66 437 endpoint (blend) | .07¼ | | .07¼ | | .07¼ | |
| **NORTH LOUISIANA—** | | | | | | |
| 58-60 437 endpoint (U. S. Motor) | .07¾ | .08 | .07½ | .07¾ | .07½ | |
| **ARKANSAS—** | | | | | | |
| 58-60 437 endpoint (U. S. Motor) | .07¾ | .08 | .07½ | .07¾ | .07½ | |
| **PENNSYLVANIA—** | | | | | | |
| 52-54 Naphtha | .08¼ | .08½ | .08¼ | .08½ | .07¾ | .08 |
| 54-56 Naphtha | .08½ | .08¾ | .08¼ | .08½ | .07¾ | .08 |
| 58-60 Gasoline | .09 | .09¼ | .08¾ | .09 | .08½ | .08¾ |
| 60 Gasoline | .09¼ | .09½ | .09¼ | .09½ | .09¼ | .09½ |
| 62 Gasoline | .09¾ | .10 | .09¾ | .10 | .09¾ | .10 |
| 64 Gasoline | .10¼ | .10½ | .10¼ | .10½ | .10¼ | .10½ |
| **CALIFORNIA—** | | | | | | |
| 58-60 437 endpoint (U. S. Motor) domestic | .09 | .10 | .09 | .10 | .09 | .10 |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| 50-52 450 endpoint (Naphtha) | .07 | .07¼ | .06¾ | .07 | .06¾ | .07 |
| 56-58 450 endpoint | .07 | .07¼ | .06¾ | .07 | .06¾ | .07 |
| 58-60 437 endpoint (U. S. Motor) | .07⅜ | .07½ | .07¼ | .07⅜ | .07⅛ | .07¼ |
| 60-62 400 endpoint | .07⅝ | .07⅞ | .07⅜ | .07⅝ | .07⅜ | .07½ |
| 64-66 375 endpoint | .08¼ | .08⅜ | .07¾ | .08 | .07¾ | .08 |
| 68-70 360 endpoint | .08¼ | .08½ | .08¼ | .08½ | .08¼ | .08½ |
| 64-66 437 endpoint (blend) | .07½ | .07⅝ | .07⅜ | .07½ | .07¼ | .07⅜ |
| **GULF COAST (Export)—** | | | | | | |
| 58-60 (U. S. Motor) | .08¼ | | .08½ | | .08½ | |
| 60-62 400 endpoint | .09½ | | .09½ | | .09½ | |
| 61-63 390 endpoint | .09¾ | | .09¾ | | .09¾ | |
| 64-66 375 endpoint | .10 | | .10 | | .10 | |

## NATURAL GASOLINE

| | Apr. 16 | | Apr. 9 | | Apr. 2 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| Grade A, 72-79.9, 375 e.p., rec. 90% | .08 | | .08 | | .08 | |
| Grade AA, 80-87.9, 375 e.p., rec. 90% | .08 | | .08 | | .08 | |
| Grade B, 76-83.9, 375 e.p., rec. 85% | .07¾ | | .07¼ | .07½ | .07 | |
| Grade BB, 84-92, 375 e.p., rec. 85% | .07¾ | | .07¼ | .07½ | .07 | |
| Grade C, 80-90, 375 e.p., rec. 78% | .07½ | | .07 | .07¼ | .06¾ | |
| **NORTH TEXAS—** | | | | | | |
| Grade A, 72-79.9, 375 e.p., rec. 90% | .08 | | .08 | | .08 | |
| Grade AA, 80-87.9, 375 e.p., rec. 90% | .08 | | .08 | | .08 | |
| Grade B, 76-83.9, 375 e.p., rec. 85% | .07¾ | | .07¼ | .07½ | .07 | |
| Grade BB, 84-92, 375 e.p., rec. 85% | .07¾ | | .07¼ | | .07 | |
| Grade C, 80-90, 375 e.p., rec. 78% | .07½ | | .07 | | .06¾ | |
| **NORTH LOUISIANA—** | | | | | | |
| Grade AA, 80-87, 375 e.p., rec. 90% | .08¼ | | .08¼ | | .08½ | |
| Grade BB, 84-92, 375 e.p., rec. 85% | .08 | | .07¾ | | .07½ | |
| Grade C, 80-92, 375 e.p., rec. 78% | .07¾ | | .07½ | | .07¼ | |
| **CALIFORNIA—** | | | | | | |
| 75-78, 375-390 endpoint | .08 | .09 | .09 | .10 | .09 | .10 |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| Grade A, 72-79.9, 375 e.p., rec. 90% | .08 | | .07¾ | .08 | .08 | |
| Grade AA, 80-87.9, 375 e.p., rec. 90% | .08 | | .07¾ | .08 | .08 | |
| Grade B, 76-83.9, 375 e.p., rec. 85% | .07¾ | | .07¼ | .07½ | .07 | |
| Grade BB, 84-92, 375 e.p., rec. 85% | .07¾ | | .07¼ | | .07 | |
| Grade C, 80-90, 375 e.p., rec. 78% | .07½ | | .07 | | .06¾ | |

## BURNING OIL

| | Apr. 16 | | Apr. 9 | | Apr. 2 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| 41-43 water white Kerosene | .06⅝ | .06¾ | .06⅝ | .06¾ | .06¾ | |
| 42–44 water white Kerosene | .07 | .07¼ | .07 | .07¼ | .07⅛ | .07¼ |
| **NORTH LOUISIANA—** | | | | | | |
| 41-43 water white Kerosene | .07¼ | | .07¼ | | .07¼ | |
| **NORTH TEXAS—** | | | | | | |
| 41-43 water white Kerosene | .06¾ | .06½ | .06½ | .06⅝ | .06⅝ | .06¾ |
| 40-42 water white Kerosene | .06¼ | | .06¼ | .06⅜ | .06⅜ | .06½ |
| **ARKANSAS—** | | | | | | |
| 41-43 water white Kerosene | .07¼ | | .07¼ | | .07¼ | |
| **PENNSYLVANIA—** | | | | | | |
| 43 Kerosene prime white | .07¼ | .07½ | .07 | .07¼ | .07 | |
| 45 Kerosene water white | .07¼ | .07½ | .07¼ | .07½ | .07⅛ | .07¼ |
| 46 Kerosene water white | .07¾ | .08 | .07½ | .07¾ | .07½ | .07¾ |
| 47 Kerosene water white | .08¼ | .08½ | .08¼ | .08½ | .07¾ | .08 |
| 300 Mineral Seal | .07¾ | .08 | .07¾ | .08 | .07¼ | .07½ |
| **CALIFORNIA—** | | | | | | |
| 38-40 water white Kero. (high-burning test) | .06½ | .07 | .06½ | .07 | .06½ | .07 |
| Engine distillate, 43-44, 445 endpoint | .07½ | .08½ | .07½ | .08½ | .07½ | .08½ |
| Engine distillate, 42-44, 480 endpoint | .07 | .08 | .07 | .08 | .07 | .08 |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| 41-43 water white Kerosene | .06½ | .06¾ | .06¾ | | .06¾ | |
| 42-44 water white Kerosene | .07 | .07⅛ | .07⅛ | .07¼ | .07 | .07¼ |
| **GULF COAST (Export)—** | | | | | | |
| 41-43 prime white | .07¾ | | .07¾ | | .07¾ | |
| 41-43 prime white | .08¾ | | .08¾ | | .08¾ | |

## FUEL OILS

| | Apr. 16 | | Apr. 9 | | Apr. 2 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| Below 18 Fuel Oil, per bbl. | .50 | .55 | .50 | .55 | .50 | .55 |
| 18-22 Fuel Oil, per bbl. | .55 | .60 | .55 | .60 | .55 | .62½ |
| 22-26 Fuel Oil, per bbl. | .60 | .65 | .60 | .67½ | .62½ | .67½ |
| 24-26 Fuel Oil, per bbl. | .65 | .70 | .65 | .70 | .67½ | .72½ |
| 26-30 Fuel Oil, per bbl. | .82½ | .87½ | .82½ | .87½ | .82½ | .87½ |
| 28-30 Fuel Oil, per bbl. (industrial) | .90 | .95 | .90 | .95 | .90 | .95 |
| 32-36 Gas Oil (industrial) | .02⅝ | .02¾ | .02¾ | .03 | .02⅞ | .03 |
| 32-36 Gas Oil (straw color) | .02¾ | .03 | .03 | | .03 | .03⅛ |
| 36-38 Distillate | .03½ | .03¾ | .03¾ | .03⅞ | .03¾ | .03⅞ |
| 38-40 Straw Distillate | .03¾ | .04 | .03¾ | .04 | .03⅞ | .04 |
| **NORTH TEXAS—** | | | | | | |
| Below 20 Fuel Oil | .65 | .70 | .70 | | .70 | |
| 24-26 Fuel Oil, per bbl. | .70 | .72½ | .72½ | .75 | .72½ | .75 |
| 32-36 Gas Oil (straw) | .02¾ | .03 | .03 | .03⅛ | .03 | .03⅛ |
| 38-40 Straw Distillate | .03¾ | .04 | .03⅞ | .04 | .03⅞ | .04 |
| **NORTH LOUISIANA—** | | | | | | |
| 18-20 Fuel Oil, per bbl. | .70 | .75 | .70 | .75 | .70 | .75 |
| 32-36 Gas Oil | .02¾ | | .03 | | .03 | |
| **ARKANSAS—** | | | | | | |
| 33-36 Distillate | .03¾ | .03⅞ | .06¾ | .03⅞ | .03¾ | .03⅞ |
| 32-36 Gas Oil (straw) | .02⅝ | | .03 | .03¼ | .03 | .03⅛ |
| 16-22 Refinery Fuel Oil, per bbl. | .70 | .75 | .70 | .75 | .70 | .75 |
| **GULF COAST (South Texas)—** | | | | | | |
| Gas Oil | .03½ | .04 | .03¼ | .04 | .03½ | .04 |
| Bunker C Fuel (cargo lots), per bbl. | .72½ | .75 | .72½ | .75 | .72½ | .75 |
| Bunker C Fuel (small lots) | .95 | 1.00 | .95 | 1.00 | .95 | 1.00 |
| **PENNSYLVANIA—** | | | | | | |
| 30-34 Fuel Oil | .04¾ | .05 | .04 | .04⅛ | .04½ | .04¾ |
| 36-40 Fuel Oil | .05¼ | .05½ | .05 | .05¼ | .05 | .05⅜ |
| **CALIFORNIA—** | | | | | | |
| 33-36 Distillate | .04¼ | .04¾ | .03¾ | .04 | .03¾ | .04 |
| 26-32 Distillate | .03½ | .04 | .03 | .03½ | .03 | .03½ |
| 15-20 Fuel Oil, Bunker (at tide water) | .65 | .85 | .65 | .85 | .65 | .85 |
| 15-20 Fuel Oil (cargo lots), per bbl. | .70 | .85 | .70 | .85 | .70 | .85 |
| 27 plus Diesel, per bbl. | .90 | 1.05 | .90 | 1.05 | .90 | 1.05 |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| 22-26 Fuel Oil, per bbl. | .60 | .67½ | .62½ | .67½ | .62½ | .67½ |
| 18-22 Fuel Oil, per bbl. | .52½ | .57½ | .55 | .60 | .55 | .60 |
| 28-30 Fuel Oil (zero) | 1.00 | 1.05 | 1.05 | 1.10 | 1.05 | 1.10 |
| 32-36 Gas Oil, zero | .02½ | .02¾ | .02½ | .02⅝ | .02⅞ | .03 |
| 32-36 Gas Oil (industrial) | .02½ | .02⅝ | .02½ | .02⅝ | .02¾ | .02⅞ |
| 36-38 Distillate | .03⅝ | .03¾ | .03⅝ | .03¾ | .03¾ | .03⅞ |
| 38-40 Straw Distillate | .03¾ | .04 | .03¾ | .04 | .03⅞ | .04 |

## LUBRICATING OIL AND WAX

| | Apr. 16 | | Apr. 9 | | Apr. 2 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| 100 vis., 2 color, 20-25 cold test | .06 | .06½ | .06 | .06½ | .06 | .06½ |
| 100 vis., 3 color, 20-25 cold test | .05¼ | .05½ | .05¼ | .05½ | .05¼ | .05½ |
| 150 vis., 3 color, 20-25 cold test | .07¼ | .07½ | .07¼ | .07½ | .07¼ | .07½ |
| 150 vis., 4 color, 20-25 cold test | .07 | .07¼ | .07 | .07¼ | .07 | .07¼ |
| 180 vis., 3 color, 23-28 cold test | .08¾ | .09 | .08¾ | .09 | .08¾ | .09 |
| 180 vis., 4 color, 23-28 cold test | .08¼ | .08¾ | .08¼ | .08¾ | .08¼ | .08¾ |
| 180 vis., 5 color, 23-28 cold test | .08¼ | .08½ | .08¼ | .08½ | .08¼ | .08½ |
| 200 vis., 3 color, 23-28 cold test | .09¼ | .09½ | .09¼ | .09½ | .09¼ | .09½ |
| 200 vis., 4 color, 23-28 cold test | .09 | .09¼ | .09 | .09¼ | .09 | .09¼ |
| 200 vis., 5 color, 23-28 cold test | .08½ | .08¾ | .08½ | .08¾ | .08½ | .08¾ |
| 240 vis., 3 color, 25-30 cold test | .12¼ | .12½ | .12¼ | .12½ | .12¼ | .12½ |
| 240 vis., 4 color, 25-30 cold test | .11¾ | .12 | .11¾ | .12 | .11¾ | .12 |
| 240 vis., 5 color, 25-30 cold test | .10¾ | .11 | .10¾ | .11 | .10¾ | .11 |
| 280 vis., 3 color, 25-30 cold test | .13¾ | .14 | .13¾ | .14 | .13¾ | .14 |
| 280 vis., 4 color, 25-30 cold test | .12¾ | .13 | .12¾ | .13 | .12¾ | .13 |
| 280 vis., 5 color, 25-30 cold test | .11¾ | .12 | .11¾ | .12 | .11¾ | .12 |
| Cylinder Stocks: | | | | | | |
| 600, steam refined, light green | .09 | .10 | .09 | .10 | .09 | .10 |
| 600, steam refined, dark green | .08 | .09 | .07 | .08 | .07 | .08 |
| 190-200 vis., D color Bright Stock | .33 | .35 | .33 | .35 | .33 | .35 |
| 150-160 vis., D color Bright Stock | .31 | .33 | .30 | .32 | .30 | .32 |
| 150-160 vis., E color Bright Stock | .29 | .31 | .28 | .30 | .28 | .30 |
| Waxes: | | | | | | |
| 124-126 White Crude Scale Wax | .03⅜ | .03½ | .03⅜ | .03½ | .03⅝ | .03¾ |
| **PENNSYLVANIA:** | | | | | | |
| 34 Neutral | .07¾ | .08 | .07½ | .07¾ | .07½ | .07⅝ |
| 34 Sundebloom | .07¾ | .08 | .07⅞ | .08 | .07⅞ | .08 |
| 36 Miners' Neutral | .07¾ | .08 | .07¼ | .07½ | .07¼ | .07½ |
| 150, 3 color | .21½ | .22 | .22½ | .23 | .21½ | .22 |
| 180, 3 color | .26 | .26½ | .26 | .26½ | .25½ | .26 |
| 200, 3 color | .28½ | .29 | .28½ | .29 | .27½ | .28 |
| 220, 3 color | .31 | .31½ | .31 | .31½ | .30 | .30½ |
| 600, steam refined | .26½ | .27 | .26½ | .27 | .23½ | .24 |
| 635, steam refined | .29½ | .30 | .29½ | .30 | .29 | .29½ |
| 650, steam refined | .31 | .32 | .34½ | .35 | .30½ | .31 |
| 600, Pennsylvania flash | .33 | .34 | .33 | .34 | .32½ | .33 |
| 630, Pennsylvania flash | .38½ | .39 | .38½ | .39 | .37½ | .38 |
| 600, E filtered | .28½ | .29 | .27½ | .28 | .25½ | .26 |
| 600, D filtered | .31½ | .32 | .31½ | .32 | .29½ | .30 |
| Pennsylvania Bright Stock | .47 | .48 | .47 | .48 | .45 | |
| *122-124 White Crude Scale Wax | .03¾ | | .04 | | .04 | |
| *124-126 White Crude Scale Wax | .04 | | .04¼ | .04½ | .04¼ | |

*At New York.

| | | | | | | |
|---|---|---|---|---|---|---|
| **GULF COAST (South Texas)—** | | | | | | |
| No. 2 color, 100 vis., pale oil | .06½ | .07 | .06½ | .07 | .06½ | .07 |
| No. 3 color, 200 vis., pale oil | .09 | .10 | .09 | .10 | .09 | .10 |
| No. 3 color, 300 vis., pale oil | .10 | .10½ | .10 | .10½ | .10½ | .11 |
| No. 3½ color, 500 vis., pale oil | .11 | .11½ | .11 | .11½ | .11½ | .12½ |
| No. 4 color, 750 vis., pale oil | .14 | .14½ | .14 | .14½ | .14 | .15 |
| No. 5 to 6 color, 200 vis., red oil | .07½ | .08 | .07½ | .08 | .07½ | .08½ |
| No. 5 to 6 color, 300 vis., red oil | .08½ | .09 | .08½ | .09 | .08½ | .09½ |
| No. 5 to 6 color, 500 vis., red oil | .09½ | .10½ | .09½ | .10½ | .09½ | .10½ |
| No. 5 to 6 color, 750 vis., red oil | .12½ | .13 | .12½ | .13 | .13 | .14 |
| No. 2½ color, 200 vis., pale filtered | .11 | .12 | .11 | .12 | .11½ | |
| No. 2½ color, 300 vis., pale filtered | .12 | .13 | .12 | .13 | .13 | .13¾ |
| No. 2½ color, 500 vis., pale filtered | .14½ | .15 | .14½ | .15 | .15½ | .16 |

# REFINERY AND CRUDE PRICES

**Quotations on refined products are for interstate or export movement unless otherwise noted.**

| | Apr. 16 | | Apr. 9 | | Apr. 2 | |
|---|---|---|---|---|---|---|
| No. 2½-3 color, 750 vis., pale filtered .. | .17 | .19 | .17 | .19 | .17 | .19 |
| **CALIFORNIA—** | | | | | | |
| 130 vis., 2½-3 color | .10¼ | .10½ | .10¼ | .10½ | .10¼ | .10½ |
| 200 vis., 2¼-3 color | .11½ | .11¾ | .11½ | .11¾ | .11½ | .11¾ |
| 300 vis., 3-3½ color | .13 | .13¼ | .13 | .13¼ | .13 | .13¼ |
| 350 vis., 3½-4 color | .13½ | .13¾ | .13½ | .13¾ | .13½ | .13¾ |
| 400 vis., 3½-4 color | .15 | .15½ | .15 | .15½ | .15 | .15½ |
| Red Neutral: | | | | | | |
| 200 vis., 4½-5 color | .11 | .11¼ | .11 | .11¼ | .11 | .11¼ |
| 300 vis., 5-6 color | .12 | .12¼ | .12 | .12¼ | .12 | .12¼ |
| 400 vis., 5-6 color | .13¼ | .14 | .13¼ | .14 | .13¼ | .14 |
| 500 vis., 4½-5 color | .15¼ | .15½ | .15¼ | .15½ | .15¼ | .15½ |
| 500 vis., 5-6½ color | .15 | .15¼ | .15 | .15¼ | .15 | .15¼ |
| 600 vis., 6½ plus color | .16 | .16¼ | .16 | .16¼ | .16 | .16¼ |

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

## NEW YORK (BAYONNE) REFINERY PRICES

| | Apr. 16 | | Apr. 9 | | Apr. 2 | |
|---|---|---|---|---|---|---|
| Gasoline, U. S. Motor, 58-60 437 | .09 | | .08¾ | | .08¾ | |
| Kerosene, water white, 41-43 | .08 | | .08 | | .08 | |
| *Fuel Oil, Bunker "C," 14-16, per bbl. | 1.05 | | 1.05 | | 1.05 | |
| †Fuel Oil, Diesel, 28-30, per bbl. | 2.00 | | 2.00 | | 2.00 | |
| Gas Oil, 32-36 gravity | .05 | .05½ | .05 | .05½ | .05 | .05½ |
| 25 pale Paraffin Oil | .10½ | | .10½ | | .10½ | |
| 28 pale Paraffin Oil | .07¼ | | .07¼ | | .07¼ | |
| 285 red Paraffin Oil | .11½ | | .11½ | | .11½ | |
| 250 red Paraffin Oil | .11 | | .11 | | .11 | |
| 225 red Paraffin Oil | .09½ | | .09½ | | .09½ | |
| 200 red Paraffin Oil | .09 | | .09 | | .09 | |
| Refined Wax: | | | | | | |
| 120-122 a.m.p., per lb. | .04½ | | .04⅝ | | .04⅞ | |
| 125-127 a.m.p., per lb. | .04¾ | | .04⅞ | | .05⅛ | |
| 130-132 a.m.p., per lb. | .06 | | .06 | | .06⅛ | |
| 133-135 a.m.p., per lb. | .06⅝ | | .06⅝ | | .06⅝ | |
| 135-137 a.m.p., per lb. | .06⅞ | | .06⅞ | | .07¼ | |
| Petrolatum in barrels, carload lots, per pound. | | | | | | |
| Dark green | .02 | | .02 | | .02 | |
| Amber | .03½ | | .03½ | | .03½ | |
| Extra amber | .03¾ | | .03¾ | | .03¾ | |
| Cream | .06½ | | .06½ | | .06½ | |
| Lily white | .07½ | | .07½ | | .07½ | |
| Snow white | .08½ | | .08½ | | .08½ | |

*Lighterage 5.0 cents a barrel extra. †Lighterage 6.5 a barrel extra.

## NEW YORK (BAYONNE) EXPORT PRICES

| | Apr. 16 | | Apr. 9 | | Apr. 2 | |
|---|---|---|---|---|---|---|
| Kerosene, prime white | .08 | | .08 | | .08 | |
| Kerosene, water white | .09 | | .09 | | .09 | |
| 600, steam refined cylinder stocks, in bbls. | .33 | | .33 | | .32 | |
| 635, steam refined | .36 | | .36 | | .35 | |
| 650, steam refined | .40 | | .40 | | .39 | |
| 600, Pennsylvania flash | .43 | | .43 | | .43 | |
| 630, Pennsylvania flash | .48 | | .48 | | .48 | |
| 600, Warren E | .35½ | | .35½ | | .35½ | |
| 600, Oil City E | .35 | | .35 | | .34½ | |
| Light 140-150 Bright Stocks | .56 | | .56 | | .50 | |
| Dark 140-150 Bright Stocks | .54 | .54½ | .54 | .54½ | .49 | |

## LOS ANGELES EXPORT PRICES

| | Apr. 16 | | Apr. 9 | | Apr. 2 | |
|---|---|---|---|---|---|---|
| Kerosene, water white | .05½ | .06 | .05½ | .06 | .05½ | .06 |
| U. S. Motor Gasoline, 53-55, 437 e.p. | .07 | .08 | .07 | .08 | .07 | .07½ |

## CRUDE OIL GRAVITY TABLE

| Gravity— | 1 Okla., Kans., N. C. Tex. | 2 No. La. and Arkansas | 3 Smackover, Ark. | 4 Stephens, Ark. | 5 Wheeler (Texas Panhandle) | 6 Gray County (Texas Panhandle) | 7 Carson and Hutchinson (Texas Panhandle) | 8 Salt Creek, Wyo. | 9 Grade B & Light Crude (G. Coast) | 10 Somerset (South Central Texas) |
|---|---|---|---|---|---|---|---|---|---|---|
| 24 and above | .... | .... | .90 | .... | .... | .... | .... | .... | .... | .... |
| Below 24 | .... | .... | .75 | .... | .... | .... | .... | .... | .... | .... |
| Below 25 | .60 | .... | .... | .... | .... | .... | .... | .... | 1.05 | .... |
| 25 to 25.9 | .66 | .... | .... | .... | .... | .... | .... | .... | 1.07 | .... |
| Below 26 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 26 to 26.9 | .72 | .... | .... | .... | .... | .... | .... | .... | 1.09 | .... |
| 27 to 27.9 | .78 | .... | .... | .... | .... | .... | .... | .... | 1.11 | .... |
| Below 28 | .... | .78 | .... | .70 | .70 | .69 | .72 | .... | .... | .... |
| 28 to 28.9 | .84 | .84 | .... | .74 | .70 | .69 | .72 | .... | 1.13 | .... |
| 29 to 29.9 | .90 | .90 | .... | .78 | .70 | .75 | .72 | .90 | 1.15 | .... |
| 30 to 30.9 | .96 | .96 | .... | .82 | .76 | .81 | .72 | .96 | 1.17 | .... |
| 31 to 31.9 | 1.02 | 1.02 | .... | .86 | .82 | .87 | .72 | 1.02 | 1.19 | .... |
| 32 to 32.9 | 1.08 | 1.08 | .... | .90 | .88 | .93 | .78 | 1.08 | 1.21 | 1.05 |
| 33 to 33.9 | 1.11 | 1.13 | .... | .... | .91 | .96 | .81 | 1.11 | 1.23 | 1.07 |
| 34 to 34.9 | 1.14 | 1.14 | .... | .... | .94 | .99 | .84 | 1.14 | 1.25 | 1.09 |
| 35 to 35.9 | 1.17 | 1.17 | .... | .... | .97 | 1.02 | .87 | 1.17 | 1.27 | 1.11 |
| 36 to 36.9 | 1.20 | 1.20 | .... | .... | 1.00 | 1.05 | .90 | 1.20 | .... | 1.13 |
| 37 to 37.9 | 1.23 | 1.23 | .... | .... | 1.03 | 1.08 | .93 | 1.23 | .... | 1.15 |
| 38 to 38.9 | 1.26 | 1.26 | .... | .... | 1.06 | 1.11 | .96 | .... | .... | 1.17 |
| 39 to 39.9 | 1.29 | 1.29 | .... | .... | 1.09 | 1.14 | .99 | .... | .... | .... |
| 40 to 40.9 | 1.32 | 1.32 | .... | .... | 1.12 | 1.17 | 1.02 | .... | .... | .... |
| 41 to 41.9 | 1.35 | 1.35 | .... | .... | 1.15 | 1.20 | 1.05 | .... | .... | .... |
| 42 to 42.9 | 1.38 | 1.38 | .... | .... | 1.18 | 1.23 | 1.08 | .... | .... | .... |
| 43 to 43.9 | 1.41 | 1.41 | .... | .... | 1.21 | 1.26 | 1.11 | .... | .... | .... |
| 44 and above | 1.44 | 1.44 | .... | .... | 1.24 | 1.29 | 1.14 | .... | .... | .... |

Column 1, Note—Magnolia Petroleum Co. posted schedule January 24, 1929, making price below 26 gravity 60 cents per barrel, 26-26.9 gravity 65 cents, 27-27.9 gravity 70 cents, 28-28.9 gravity 75 cents, 29-29.9 gravity 80 cents, 30-30.9 gravity 90 cents and 31-31.9 gravity $1, with balance of the price schedule as shown.

Oklahoma—Humble Oil & Refining and Carter Oil Co. January 24, Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., The Texas Company, January 25.

North Central Texas—Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs (Southwest Texas, Iatan and Panola, Iatan posted a flat price of 93 cents by Magnolia on January 14, 1928), Currie, Nocona and Moran. Prairie, Sinclair and Gulf, The Texas Company, January 25, Humble Oil & Refining Co., January 24.

Kansas—Prairie, Sinclair and The Texas Company, January 25; Carter, January 24.

Column 2—Arkansas and North Louisiana—[Caddo, Bull Bayou, Crichton, De Soto, Haynesville, Homer and El Dorado only], Standard Oil Co. of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co., Magnolia Petroleum Co., schedule effective January 26 applies to Pine Island, Haynesville, Bull Bayou, Louisiana, and El Dorado, Ark., light crude. The Texas Company January 24 posted prices below 28 gravity at 6 cents differential per degree with minimum of 60 cents for all below 24 gravity.

Column 3—February 6, Louisiana Oil Refining Corp.; February 7, Standard Oil Co. of Louisiana, The Texas Company, Gulf Refining Co., Magnolia Petroleum Co., and on February 10, Atlantic Oil Producing Co.

Column 4—Atlantic Oil Producing Co., Louisiana Oil Refining Corp., January 28.

Column 5, 6 and 7—Humble Oil & Refining Co., Magnolia Petroleum Co., January 24, 1929.

Column 8—Midwest Refining Co., January 25, 1929. All crude over 37 gravity $1.23 per barrel.

Column 9—Humble Oil & Refining Co. and other major buyers January 26 (schedule ends 35 and above), with exception of Magnolia Petroleum Co., which stops at 31 degrees gravity. Sun Pipe Line Co. and The Texas Company posted 2 cents differential for each degree above 35 gravity and 1.37 for 40 gravity and above.

Column 10—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

## CALIFORNIA CRUDE OIL PRICES

**Standard Oil Co.-Union Oil Co. (Effective January 18, 1929)**

| Gravity— | 1 Salt Lake, Potrero, Newport, Long Beach, Summerland, Lawndale, Los Angeles, Fullerton, Richfield, Torrance, Olinda-Brea, Alamitos Heights, Signal Hill, Seal Beach, Huntington Beach, Athens, Inglewood, Rosecrans-Dominguez, Watsonville | 2 Whittier, La Habra, Coyote Hills | 3 Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills | 4 Montebello | 5 Santa Fe Springs | 6 Santa Maria, Coalinga | 7 Wheeler Ridge, Fruitvale | 8 Orcutt | 9 Ventura, Rincon, Ventura Ave. | 10 Elwood Terrace |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 to 14.9 | .70 | .70 | .50 | .70 | .... | .50 | .50 | .65 | .70 | .... |
| 15 to 15.9 | .70 | .70 | .50 | .70 | .... | .50 | .50 | .65 | .70 | .... |
| 16 to 16.9 | .70 | .70 | .50 | .70 | .... | .50 | .50 | .65 | .70 | .... |
| 17 to 17.9 | .70 | .70 | .50 | .70 | .... | .50 | .50 | .65 | .70 | .... |
| 18 to 18.9 | .75 | .75 | .56 | .70 | .... | .56 | .56 | .70 | .75 | .... |
| 19 to 19.9 | .80 | .80 | .62 | .75 | .... | .62 | .62 | .70 | .80 | .... |
| 20 to 20.9 | .85 | .84 | .68 | .80 | .... | .68 | .68 | .70 | .85 | .... |
| 21 to 21.9 | .89 | .88 | .74 | .85 | .89 | .74 | .74 | .86 | .86 | .... |
| 22 to 22.9 | .93 | .91 | .80 | .90 | .92 | .80 | .80 | .87 | .87 | .... |
| 23 to 23.9 | .97 | .94 | .85 | .95 | .95 | .85 | .85 | .90 | .90 | .... |
| 24 to 24.9 | 1.01 | .97 | .90 | .98 | .98 | .88 | .88 | .94 | .94 | .... |
| 25 to 25.9 | 1.05 | 1.00 | .95 | 1.01 | 1.01 | .91 | .91 | .98 | .98 | .... |
| 26 to 26.9 | 1.09 | 1.04 | 1.00 | 1.04 | 1.04 | .94 | .94 | 1.02 | 1.02 | .... |
| 27 to 27.9 | 1.13 | 1.08 | 1.05 | 1.07 | 1.07 | .98 | .97 | .... | 1.06 | .... |
| 28 to 28.9 | 1.17 | 1.12 | 1.10 | 1.10 | 1.10 | 1.02 | .... | .... | 1.10 | .... |
| 29 to 29.9 | 1.21 | 1.16 | 1.16 | 1.13 | 1.15 | 1.06 | .... | .... | 1.14 | .... |
| 30 to 39.9 | 1.25 | 1.20 | 1.22 | 1.16 | 1.20 | 1.10 | .... | .... | 1.18 | .... |
| 31 to 31.9 | 1.30 | .... | 1.28 | .... | 1.25 | 1.14 | .... | .... | 1.23 | .... |
| 32 to 32.9 | 1.35 | .... | 1.34 | .... | 1.30 | 1.18 | .... | .... | 1.28 | .... |
| 33 to 33.9 | 1.41 | .... | 1.40 | .... | 1.35 | 1.22 | .... | .... | 1.34 | .... |
| 34 to 34.9 | 1.47 | .... | 1.46 | .... | 1.40 | 1.26 | .... | .... | 1.40 | 1.16 |
| 35 to 35.9 | 1.53 | .... | .... | .... | 1.45 | 1.30 | .... | .... | 1.46 | 1.22 |
| 36 to 36.9 | 1.59 | .... | .... | .... | 1.50 | .... | .... | .... | 1.52 | 1.28 |
| 37 to 37.9 | 1.65 | .... | .... | .... | 1.55 | .... | .... | .... | 1.58 | 1.34 |
| 38 to 38.9 | 1.71 | .... | .... | .... | 1.60 | .... | .... | .... | 1.64 | 1.40 |
| 39 to 39.9 | 1.77 | .... | .... | .... | 1.65 | .... | .... | .... | 1.70 | 1.46 |
| 40 to 40.9 | 1.83 | .... | .... | .... | .... | .... | .... | .... | 1.76 | 1.52 |
| 41 to 41.9 | 1.89 | .... | .... | .... | .... | .... | .... | .... | 1.82 | 1.58 |
| 42 to 42.9 | 1.95 | .... | .... | .... | .... | .... | .... | .... | 1.88 | 1.64 |

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain 11 to 13.9 gravity 45 cents, 14 gravity and above 50 cents, effective October 2, 1929. On December 1, 1928, the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 45 cents, 14 gravity and above 50 cents.

Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity. Dominguez and Athens-Rosecrans, 24 to 42.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 45 cents.

Column 6—Oil below 14 gravity posted at 45 cents.

Columns 8 and 9 posted by Union Oil Co. only.

## CRUDE OIL PRICES

**OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS**

Corsicana heavy (January 11)* ..... .80
Other fields .....See gravity table

*Posted by Magnolia Petroleum Co.

**TEXAS PANHANDLE**

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

**WEST TEXAS**

Iatan*.....Same as North Texas
Crane-Upton-Crockett, Pecos, Winkler and Glasscock (July 26)‡ .....$ .65
Chalk† ..... .65
Mitchell† ..... .65

*Includes Howard County and Westbrook Fields.

†Magnolia Petroleum Co., January 26, 1929.

‡Posted by Humble Oil & Refining Co., Magnolia Petroleum Co., and Gulf Pipe Line Co.

**ARKANSAS-NORTH LOUISIANA**

Cotton Valley (Below 36 gravity April 11) .....$ .75
Bellevue ..... 1.20
Urania (Oct. 16, 1928) ..... .90
East El Dorado (March 16, 1927) .... 1.00
Other fields.....See gravity table

Cotton Valley crude above 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Gulf Refining Co., and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co., Gulf Refining Co.

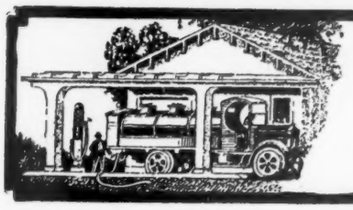
**GULF COAST**

(Goose Creek, Hull, Liberty, West Columbia, Orange, Boling, Sour Lake, Humble, Sugarland, Raccoon Bend, High Island, Pierce Junction and Spindletop.)

Grade A (March 14)* .....$1.20
Grade B .....See gravity table
Jennings, La. (March 14)†.....$1.05
Saratoga, Batson, Daytona (March 14, 1927)‡ ..... 1.20
Markham (March 14)§ ..... 1.00
High Island (December 14)¶..... 1.00

*Humble Oil & Refining Co. and other major buyers. †Gulf Pipe Line Co. ‡Sun Pipe

(Continued on Page 150)



# TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns April 16.

## ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

### STANDARD OIL CO. (INDIANA)

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Chicago dist.†.. | 14.0 | 15.0 | ... | 13.0 |
| Decatur, Ill. ... | 14.2 | 15.2 | ... | 13.1 |
| E. St. Louis.... | 13.4 | 14.4 | ... | 12.2 |
| Joliet ..... | 14.4 | 15.4 | ... | 13.3 |
| Peoria ..... | 14.2 | 14.0 | ... | 13.1 |
| Quincy ..... | 14.2 | 15.2 | ... | 12.9 |
| Davenport, Ia... | 17.5 | 18.5 | 3.0 | 13.3 |
| Des Moines..... | 17.5 | 18.5 | 3.0 | 13.3 |
| Keokuk ..... | 17.5 | 18.5 | 3.0 | 14.3 |
| Sioux City .... | 17.1 | 18.1 | 3.0 | 12.9 |
| Duluth, Minn... | 17.5 | 18.5 | 2.0 | 13.9 |
| Mankato ..... | 17.1 | 18.1 | 2.0 | 13.7 |
| Minneapolis ... | 17.2 | 18.2 | 2.0 | 13.9 |
| La Crosse, Wis.. | 17.2 | 18.2 | 2.0 | 14.0 |
| Milwaukee ..... | 16.1 | 17.1 | 2.0 | 12.9 |
| Madison ..... | 16.3 | 17.3 | 2.0 | 13.1 |
| Detroit, Mich... | 17.8 | 18.8 | 3.0 | 14.7 |
| Grand Rapids.. | 17.7 | 18.7 | 3.0 | 14.6 |
| Saginaw ..... | 17.9 | 18.9 | 3.0 | 14.8 |
| Evansville, Ind.. | 18.0 | 19.0 | 4.0 | 14.0 |
| Fort Wayne.... | 18.4 | 19.4 | 4.0 | 14.4 |
| Indianapolis ... | 18.2 | 19.2 | 4.0 | 14.2 |
| South Bend .... | 18.4 | 19.4 | 4.0 | 14.4 |
| Fargo, N. D.... | 18.9 | 19.9 | 2.0 | 15.9 |
| Huron, S. D.... | 19.3 | 20.3 | 4.0 | 14.7 |
| Sioux Falls .... | 18.1 | 19.1 | 4.0 | 14.4 |
| K. C., Mo.* .... | 16.9 | 17.9 | 3.0 | 11.6 |
| Springfield* ... | 16.8 | 17.8 | 3.0 | 12.5 |
| St. Louis* ..... | 15.9 | 16.9 | 2.5 | 12.3 |
| St. Joseph ..... | 16.5 | 17.5 | 3.0 | 12.2 |
| Wichita, Kans. | 15.8 | 16.8 | 3.0 | 11.8 |
| Bartlesville, Ok. | 15.5 | 16.5 | 3.0 | 11.5 |

*State tax 2 cents; remainder city tax.
†Effective February 20, discounts on Q.D.A. in Chicago district 2 cents off service station price on purchases of 500 gallons or more per month and 4 cents on purchases of 1,000 gallons or more per month.

#### NAPHTHA

| | Tank wagon | Tank car |
|---|---|---|
| Oleum spirits ..... | 14.7 | 11.9 |
| V. M & P. naphtha ..... | 16.2 | 12.9 |
| Cleaner's naphtha ..... | 16.0 | 13.9 |
| Stanisol ..... | 17.0 | 14.4 |

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting. Cleaner's naphtha price of 16 cents and Stanisol 17 cents effective March 24.

#### STANOLIND FURNACE OIL IN CHICAGO

| | |
|---|---|
| Less than 100 gallons ..... | 9.0 |
| 100 to 799 gallons ..... | 8.0 |
| 800 or more gallons ..... | 7.5 |

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline: 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 2½ cents; more than 6,000 gallons, 3 cents. Discounts are allowed each month, and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

### ATLANTIC COAST DISTRICT

#### Standard Oil Co. (New Jersey)

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Atlantic City... | 16.0 | 20.0 | 2.0 | 13.0 |
| Newark, N. J... | 16.0 | 20.0 | 2.0 | 13.0 |
| Annapolis, Md.. | 18.0 | 22.0 | 4.0 | 13.0 |
| Baltimore ..... | 18.0 | 22.0 | 4.0 | 12.0 |
| Cumberland .... | 18.0 | 22.0 | 4.0 | 13.0 |
| Washington ... | 16.0 | 20.0 | 2.0 | 12.0 |
| Danville, Va.... | 19.0 | 23.0 | 5.0 | 13.0 |
| Norfolk ..... | 19.0 | 23.0 | 5.0 | 13.0 |
| Petersburg .... | 19.0 | 23.0 | 5.0 | 13.0 |
| Roanoke ..... | 19.0 | 23.0 | 5.0 | 13.0 |
| Richmond ..... | 19.0 | 23.0 | 5.0 | 13.0 |
| Charles'n, W.Va. | 18.0 | 22.0 | 4.0 | 13.0 |
| Keyser ..... | 18.0 | 22.0 | 4.0 | 13.0 |
| Parkersburg ... | 18.0 | 22.0 | 4.0 | 13.0 |
| Wheeling ..... | 18.0 | 22.0 | 4.0 | 13.0 |
| Charlotte, N. C. | 19.0 | 23.0 | 5.0 | 13.0 |
| Hickory ..... | 19.0 | 23.0 | 5.0 | 13.0 |
| Mt. Airy ..... | 19.0 | 23.0 | 5.0 | 13.0 |
| Salisbury ..... | 18.0 | 20.0 | 5.0 | 13.0 |
| Charls'ton, S.C.. | 20.0 | 24.0 | 6.0 | 13.0 |
| Columbia ..... | 20.0 | 24.0 | 6.0 | 13.0 |

### OHIO

#### Standard Oil Co. (Ohio)

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Ohio points* .. | 17.0 | 18.0 | 3.0 | †14.0 |

*Dealers and commercial accounts 2 cents under tank wagon.
†Service station price 16 cents.

### PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

#### The Atlantic Refining Co.

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Pittsburgh, Pa.. | 16 0 | *21 0 | ... | 14.0 |
| Philadelphia .. | 16.0 | *21 0 | ... | 14 0 |
| Scranton ..... | 16 0 | *21.0 | ... | 14.0 |
| Allentown .... | 16 0 | *21.0 | ... | 14 0 |
| Altoona ..... | 16 0 | *21 0 | ... | 14 0 |
| Erie ..... | 13 0 | *21.0 | ... | 14 0 |
| Dover, Del. ... | 19 0 | 21.0 | 3 0 | 14.0 |
| Wilmington ... | 19.0 | 21 0 | 3 0 | 14 0 |
| Springf'd, Mass. | 18.0 | 20.0 | 2.0 | 15.0 |
| Worcester ..... | 18.0 | 20.0 | 2.0 | 15.0 |
| Boston ..... | 18.0 | 20.0 | 2.0 | 15.0 |
| Providence, R.I. | 15.0 | 16.0 | 2.0 | 15.0 |
| Hartford, Conn. | 18.0 | 20.0 | 2.0 | 14.0 |
| New Haven .. | 17.0 | 18.0 | 2.0 | 15 0 |

*Includes tax of 3.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the state. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

### NEW YORK AND PART OF NEW ENGLAND DISTRICT

#### Standard Oil Co. (New York)

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Albany, N. Y... | 16.0 | 18.0 | ... | 15.0 |
| New York* .... | 16.0 | 18.0 | ... | 15.0 |
| Buffalo ..... | 16.0 | 18.0 | ... | 14.0 |
| Rochester ..... | 16.0 | 18.0 | ... | 14.0 |
| Syracuse ..... | 16.0 | 18.0 | ... | 15.0 |
| Boston, Mass. .. | 18.0 | 20.0 | 2.0 | 15.0 |
| Augusta, Me. .. | 20.0 | 22.0 | 4.0 | 15.0 |
| Manch't'r, N.H. | 20.0 | 22.0 | 4.0 | 15.0 |
| Burlington, Vt.. | 19.0 | 20.0 | 4.0 | 15.0 |

*Prices in steel barrels.

### SOUTHERN DISTRICT

#### Standard Oil Co. (Kentucky)

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Atlanta, Ga. .. | 21.0 | 23.0 | 4.0 | 16.5 |
| Augusta ..... | 21.0 | 23.0 | 4.0 | 15.5 |
| Macon ..... | 21.0 | 22.0 | 4.0 | 16.5 |
| Savannah ..... | 20.0 | 22.0 | 4.0 | 15.5 |
| Birm'ham, Ala.. | 18.0 | 20.0 | 4.0 | 13.0 |
| Mobile ..... | 21.0 | 23.0 | 4.0 | 15.0 |
| Montgomery .. | 22.0 | 24.0 | 4.0 | 16.5 |
| Clarks'le, Miss.. | 21.0 | 23.0 | 5.0 | 12.5 |
| Jackson ..... | 20.0 | 22.0 | 5.0 | 13.0 |
| Natchez ..... | 20.5 | 22.5 | 5.0 | 14.0 |
| Gulfport ..... | 22.5 | 24.5 | 5.0 | 14.0 |
| Vicksburg ..... | 20.5 | 22.5 | 5.0 | 14.0 |
| Jack'ville, Fla.. | 22.0 | 24.0 | 5.0 | 14.5 |
| Miami ..... | 23.0 | 25.0 | 5.0 | 15.5 |
| Pensacola ..... | 23.0 | 25.0 | 5.0 | 14.5 |
| Tampa ..... | 22.0 | 24.0 | 5.0 | 14.5 |
| Lexington, Ky.. | 20.0 | 22.0 | 5.0 | 15.5 |
| Covington ..... | 20.0 | 21.0 | 5.0 | 15.5 |
| Louisville ..... | 20.0 | 22.0 | 5.0 | 15.0 |
| Ashland ..... | 21.0 | 23.0 | 5.0 | 15.5 |
| Catlettsburg .. | 21.0 | 23.0 | 5.0 | 16.5 |

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. Pensacola and Mobile taxes include 1-cent city levy. Gulfport tax includes privilege tax of 2 cents in addition to state tax.

### PACIFIC COAST TERRITORY

#### Standard Oil Co. (California)*

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| San Francisco . | 19.0 | 23.0 | 3.0 | 15.5 |
| Los Angeles .. | 18.5 | 22.5 | 3.0 | 15.5 |
| Reno, Nev. .... | 24.0 | 26.0 | 4.0 | 19.0 |
| Portland, Ore... | 19.5 | 23.5 | 3.0 | 16.5 |
| Seattle, Wash.. | 18.5 | 22.5 | 2.0 | 16.5 |
| Tacoma ..... | 18.5 | 22.5 | 2.0 | 16.5 |
| Spokane ..... | 22.5 | 26.5 | 2.0 | 20.5 |
| Phoenix, Ariz.. | 18.0 | 22.0 | 4.0 | 20.5 |

### NEBRASKA

#### Standard Oil Co. (Nebraska)

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Omaha ..... | 18.25 | 20.25 | 4.0 | 13.25 |
| McCook ..... | 19.75 | 21.75 | 4.0 | 14.75 |
| Norfolk ..... | 18.75 | 20.75 | 4.0 | 13.75 |
| N. Platte ..... | 19.75 | 21.75 | 4.0 | 14.5 |
| Scottsbluff ... | 19.75 | 21.75 | 4.0 | 14.25 |

### CENTRAL SOUTH DISTRICT

#### Standard Oil Co. (Louisiana)

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| N. Orleans, La.* | 15.5 | 19.5 | 5.0 | 16.0 |
| Baton Rouge... | 14.0 | 18.0 | 4.0 | 14.5 |
| Alexandria .... | 15.0 | 19.0 | 4.0 | 16.0 |
| Lafayette† ..... | 16.0 | 20.0 | 5.0 | 14.0 |
| Lake Charles.. | 15.5 | 19 5 | 4.0 | 16 0 |
| Shreveport .... | 15.0 | 19.0 | 4.0 | 15.0 |
| Knoxv'le, Tenn. | 20.0 | 24.0 | 5.0 | 16.0 |
| Memphis ..... | 18.0 | 22.0 | 5.0 | 12.5 |
| Chattanooga .. | 19.5 | 23.5 | 5.0 | 16.0 |
| Nashville ..... | 19.0 | 23.0 | 5.0 | 16.0 |
| Bristol ..... | 20.0 | 23.0 | 5.0 | 14.0 |
| Lit. Rock, Ark.. | 17.0 | 21.0 | 5.0 | 13.0 |

*Tax of 5 cents includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax and 1-cent parish tax. †Five-cent tax includes 1-cent tax in Lafayette Parish.

### SOUTHWESTERN DISTRICT

#### Magnolia Petroleum Co.

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Dallas, Tex. ... | 13.0 | 17.0 | 2.0 | 13.0 |
| Fort Worth ... | 13.0 | 16.0 | 2.0 | 13.0 |
| Houston ..... | 14.0 | 18.0 | 2.0 | 13.0 |
| San Antonio .. | 13.0 | 17.0 | 2.0 | 12.0 |
| El Paso ..... | 17.0 | 20.0 | 2.0 | 16.0 |
| Texarkana ..... | 16.0 | 20.0 | 2.0 | 13.0 |
| Muskogee, Ok.* | 15.0 | 18.0 | 3.0 | 12.0 |
| Okla. City*..... | 16.0 | 18.0 | 3.0 | 12.0 |
| Tulsa* ..... | 15.0 | 18.0 | 3.0 | 11.0 |
| Ft. Smith, Ark. | 15.0 | 19.0 | 5.0 | 12.0 |
| Little Rock .... | 17.0 | 21.0 | 5.0 | 13.0 |

*Gasoline tank wagon price to dealers 2 cents under posted tank wagon.

### ROCKY MOUNTAIN DISTRICT

#### Continental Oil Co.

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Denver, Colo.... | 14.0 | 16.0 | 3.0 | 15.5 |
| Pueblo ..... | 17.0 | 20.0 | 3.0 | 15.5 |
| Grand Junction. | 21.5 | 24.5 | 3.0 | 19.0 |
| Casper, Wyo. . | 19 0 | 22 0 | 4.0 | 14 0 |
| Cheyenne ..... | 20.0 | 23 0 | 4.0 | 15.5 |
| Butte, Mont. .. | 24.5 | 27 5 | 5.0 | 20.0 |
| Helena ..... | 24 5 | 27.5 | 5.0 | 20 0 |
| Salt Lake, Utah | 21.0 | 24.0 | 3.5 | 17.0 |
| Albu'que, N. M. | 21.0 | 24 0 | 5.0 | 17 0 |
| Boise, Idaho.... | 23.5 | 26.5 | 4.0 | 19.0 |
| Twin Falls .... | 23.5 | 26.5 | 4.0 | 19.0 |

## TANK WAGON CHANGES

April 11—Atlantic Refining Co. advanced the gasoline tank wagon and station prices 1 cent throughout Pennsylvania and Delaware.

April 6—Continental Oil Co. reduced the gasoline tank wagon and station prices 1 cent in Albuquerque, N. Mex.

## CRUDE PRICE CHANGES

April 15.—Standard Oil Co. of Indiana advanced Dundee, Michigan, crude 10 cents to 70 cents per barrel.

Pure Oil Co. reduced Midland, Michigan, crude to $1.50 per barrel.

## ILLINOIS INSPECTION LAW FOR LIGHT OILS

In the Illinois Senate a bill has been submitted by Senator Mason which provides that after July 31, 1929, all petroleum products must be inspected by the Department of Finance. The Federal grade of gasoline known as aviation gasoline, domestic grade, shall be known as Illinois Class 1 gasoline; the Federal grade known as motor gasoline, shall be known as Illinois Class 2 gasoline; the Federal grade of kerosene, water white kerosene illumination and fuel purposes, shall be known as Illinois Class 3 kerosene and naphtha for cleaning purposes shall be known as Illinois Class 4. Federal specifications for petroleum products shall be used. All containers of gasoline must be stamped and labelled and the price per gallon must appear. The fee for inspecting gasoline, kerosene or naphtha shall be 1½ cents per barrel of 50 gallons.

## KANSAS OIL MEN TO MEET

A. C. Crawford, president of the Kansas Oil Men's Association, has announced the annual meeting of the association will be held at Wichita, Kans., on May 2 and 3, in the Broadview Hotel.

## CRUDE OIL PRICES

(Continued from Page 149)

Line Co. §The Texas Company.
¶Posted by Gulf Pipe Line Co.

### ROCKY MOUNTAIN STATES

#### Ohio Oil Co.-Midwest Refining Co.

(Effective January 25, 1929)

| | |
|---|---|
| Rock Creek, Wyo. | $1.18 |
| Salt Creek | See gravity table |
| Big Muddy | $1.21 |
| Grass Creek, heavy (July 27, 1928) | .90 |
| Grass Creek, light | 1.30 |
| Mule Creek (May 1, 1928) | 1.10 |
| Elk Basin | 1.30 |
| Lance Creek | 1.33 |
| Poison Spider (March 14, 1927) | 1.00 |
| Notches (March 14, 1927) | .65 |
| Rex Lake (February 22) | 1.10 |
| Osage | 1.33 |
| Lost Soldier (contract) | 1.00 |
| Hamilton Dome (March 14, 1927) | .85 |
| Greybull | 1.57 |
| Cat Creek (Montana) (July 27, 1928) | 1.40 |
| Sunburst (Montana) (May 18, 1928) | 1.01 |
| Torchlight | 1.30 |
| Artesia (July 27, 1928) | 1.00 |
| Hogback (New Mexico) (July 27, 1928) | 1.41 |

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

### SOUTH CENTRAL AND SOUTHWESTERN TEXAS

| | |
|---|---|
| Luling (January 11)* | $ .80 |
| Mirando (January 7)† | .80 |
| Salt Flat (April 8, 1929)§ | 1.00 |
| Rockdale-Minerva (April 15): | |
| Below 28 gravity | 1.25 |
| 28-38.9 gravity | 1.27 |
| 39-39.9 gravity | 1.29 |
| 40 and above | 1.31 |
| Thrall‡ | |
| Callihan (May 15) | 1.75 |
| Lytton Springs (Lockhart) | See gravity table |
| Somerset | See gravity table |

*Posted by Magnolia Petroleum Co.
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.
‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight.
§Humble Oil & Refining Co.

### EASTERN STATES

(Effective January 4, 1929)

| | |
|---|---|
| Penna Grade Oil in New York Transit Lines (New York) | $4.10 |
| Bradford District Oil in National Transit Lines (Pennsylvania) | 4.10 |
| Penna Grade Oil in National Transit Lines (Pennsylvania) | 4.00 |
| Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia) | 4.00 |
| Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania) | 3.90 |
| Penna Grade Oil in Buckeye Pipe Line Lines (Ohio) | 3.85 |
| Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (March 12) | 1.45 |
| Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Line (January 25, 1929) | 1.65 |
| Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (January 25, 1929) | 1.75 |
| Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (March 13, 1929) | 1.50 |
| Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (Jan. 29) | .60 |

### MIDDLE WESTERN STATES

#### Ohio Oil Co.

(Effective January 25, 1929)

| | |
|---|---|
| Lima | $1.50 |
| Wooster | 1.65 |
| Illinois | 1.45 |
| Indiana | 1.27 |
| Princeton | 1.45 |
| Plymouth | 1.10 |
| Waterloo (November 17, 1926) | 1.32 |
| Western Kentucky | 1.55 |
| Dundee, Mich. (April 15, 1929)** | .70 |
| Midland, Mich. (April 15, 1929)* | 1.50 |
| Saginaw, Mich., Saginaw Sand (February 10)† | 1.80 |
| Saginaw, Mich., Berea Sand (February 10)† | 1.75 |
| Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky, (March 16)‡ | 1.50 |
| Oil in line in Stoll Oil Refining Co. in Oil City, Ky. (Mar. 16, 1929)§ | 1.50 |
| Oil Springs (Canada)¶ | 1.97 |
| Petrolia (Canada)¶ | 1.90 |

*Posted by Pure Oil Co.
†Posted by Sun Oil Co.
‡Posted by Paragon Development Co.
§Posted by Stoll Oil Refining Co.
¶Posted by Imperial Oil Co., Ltd.
**Posted by Standard of Indiana.

### MEXICAN CRUDE

| | |
|---|---|
| Panuco heavy (f.o.b. Mexican ports) | $1.15 |

Note—Due to the fact that the exportation of Tuxpan light crude has become a negligible factor, prices will no longer be published.

# *No Longer* do you have to buy gasoline that's just right for somebody *else's* car . . . .

*-use the one thats best for yours!*

The ACE of High-Test Gasolines . . . for Speedy Take-off . . . Flashy Acceleration . . . Brilliant Performance

It meets the specifications of the Army, Navy, and Bureau of Mines for AVIATION GASOLINE—domestic grade

Gives Higher Compression . . . Stops Knocks . . . Better Low-Gear Performance

Economy and Mileage . . . Full of Eager Power

"WHAT kind of gasoline should *your* engine have?" "What kind do *you* like to drive with?" These are questions which can be asked—and *answered*—at Sinclair Stations and Sinclair Dealers. Because Sinclair now offers not *one* gasoline but a *line* of gasolines! And each is a different gas that serves a very definite motoring purpose.

Do you want a fast-starting, fast-accelerating, fast-stepping engine? Then have *Sinclair Aircraft Gasoline*—the flashiest, most brilliant-performing gas on the road! Gets away like a rocket! The Ace of high-test gasolines!

Do you want a High-Compression gasoline that assures better low-gear performance and stops knocks in any make of engine? Then ask for *Sinclair H-C Gasoline!* Or, do you want a gasoline that's full of eager power, yet is three cents lower in price—gives you mileage—at minimum cost? Then say *"Sinclair Regular!"*

They're *all*-gasoline—nothing added!

No longer do you have to buy the gasoline that's just right for somebody else's car—use the one that's best for yours! The Sinclair "Three-Gas" Service assures it to you. Try *selecting* your gasoline wherever you see the Sinclair Sign, and enjoy a new motoring experience.

## SINCLAIR "*Three Gas*" SERVICE

© 1929 S. R. C.

*A gas for every motoring need—let us help you get SUPERIOR ENGINE PERFORMANCE*

SINCLAIR REFINING COMPANY, Inc., 45 NASSAU STREET, NEW YORK ATLANTA BOSTON CHICAGO HOUSTON KANSAS CITY

# Continental-Marland Merger Report

## Another Nation-Wide Unit in Oil Industry Said To Be in Negotiation. Union Oil Also Mentioned

NEW YORK, Apr. 15. — Formation of another nation-wide unit in the oil industry through consolidation of the Continental Oil Co. and the Marland Oil Co., with combined total assets of close to $200,000,000, is looked for shortly. According to reports in well-posted quarters here a definite agreement to merge has already been arrived at following a conference of Continental and Marland officials held at the headquarters of Continental in Denver.

According to reports current in financial quarters, the consolidation is being effected through the firm of J. P. Morgan & Co., which is interested in both companies. Morgan interests are on the Marland board and through Newmont Mining, another Morgan concern, have large holdings in Continental Oil, the latter a former unit in the old Standard Oil group. The shares of Continental Oil Co. are held in a voting trust, the trustees of which are Carl H. Pforzheimer, S. H. Keoughan, president of Continental, and John Evans, president of the International Trust Co. This voting trust expires in 1933. While the method of effecting the consolidation has not yet been disclosed, it is expected to take the form of organization of a holding company, to acquire the two companies.

Marland Oil Co., it is believed, will lose its identity in the merger, the consolidated company to be known as Continental Oil Co. The reason for the dropping of the Marland name is seen in the fact that E. W. Marland, founder and until recently president of the Marland Oil Co., is no longer connected with the company. Mr. Marland is now engaged in forming another oil company, built around the Ponca City Oil Co., and known as the E. W. Marland Co.

Consolidation of the two companies would form an oil unit with properties extending from coast to coast. Continental is operating principally in the Rocky Mountain area, where it formerly operated as a subsidiary of Standard Oil Co. (New Jersey), but is also active in California and parts of the Mid-Continent area. Marland's operations have been concentrated to a great extent in the central states, and the company within the past few months has entered the Atlantic Coast market with purchase of the Prudential Refining Co., of Baltimore, and several smaller properties in the East. The consolidation would tie up the physical properties of the two companies, and form the basis for a national oil unit.

Following consolidation of Continental and Marland, the details of which have only been agreed upon in principle, it is reported that Union Oil Co. of California may be acquired by the banking interests backing Continental and Marland, and consolidated with these two companies. Union of California is one of the major oil companies operating in California, and negotiations looking to the later inclusion of this company in the Continental-Marland deal, it is understood, are already in progress.

The retirement last fall of E. W. Marland and a number of other Marland officials, and the election of D. J. Moran, former vice president and director of The Texas Corporation, as president of Marland Oil, was interpreted here at the time as the first move by the Morgan interests in a plan to organize a leading independent oil unit.

At the close of 1928, Marland Oil Co. reported total assets of $104,903,599 and Continental $84,297,004.

Details of the consolidation, while not yet announced, are understood to involve the exchange of shares between the two companies, on the basis of the present market value of the two stocks, or a ratio of about five to eight, Continental selling around $25 and Marland close to $40 per share.

The principal executives of both companies will be retained in the merged company, it is reported. Operating management of the combined enterprise, according to trade reports, is to rest with D. J. Morgan as president. Reports further are that E. T. Wilson, chairman of the Continental, will occupy a similar position as chairman of the new company and that S. H. Keoughan, now president of the Continental, will be chairman of the executive committee.

### Twenty Representative Stocks

The Oil and Gas Journal weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Saturday, was as follows:

| | |
|---|---|
| January 26 | 57.44 |
| February 2 | 57.55 |
| February 9 | 55.28 |
| February 16 | 55.35 |
| February 23 | 54.92 |
| March 2 | 56.43 |
| March 9 | 55.96 |
| March 16 | 58.63 |
| March 23 | 58.52 |
| March 30 | 58.57 |
| April 6 | 58.26 |
| April 13 | 58.52 |

### Tidal Osage

Tidal Osage Oil Co. declared a special dividend of $1, payable May 1 to stock of record April 18.

### Skelly Oil

Skelly Oil Co. declared the regular quarterly dividend of 50 cents, payable June 15 to stock of record May 15.

### Mexico-Ohio Oil

Balance sheet of Mexico-Ohio Oil Co. as of December 31, 1928, shows profit and loss deficit of $4,721,656, contrasted with surplus of $20,287 at end of preceding year, due principally to writing down of leases, concessions and equipment to $656,974 from $5,089,613. Cash at end of last year was $15,572, working fund advances $2,361, unmatured interest receivable $3,062 and investment securities $300,375, making total assets $978,344.

There are outstanding 399,520 shares of no par value, carried at $5,692,320, of which Ohio Oil Co. owns 178,200 shares. Minority interest in subsidiary totals $7,680.

Write-off of leases was occasioned by cancellation of concessions comprising 4,000,000 acres and losses sustained in drilling of two nonproductive wells in Mexico. San Marcos concessions south of the town of Cuatro Cienegas was relinquished, test well having been abandoned. Operations are being continued on Zambrano concession in northern Coahuila. Concession to 310,000 acres adjacent to the Zambrano ranch has been obtained from the Mexican government and company is negotiating for acquisition of desirable acreage in Nuevo Leon.

### Standard Oil of New Jersey

H. G. Seidel, in charge of European production, and Orville Harden, head of the co-ordination department, have been elected directors of Standard Oil Co. of New Jersey. These addition have increased the board to 19 members.

### Sun Oil

Sun Oil Co. declared the regular quarterly dividend of $1.50 on preferred stock, payable June 1 to stock of record May 10.

### New Bradford Oil

Statement of New Bradford Oil Co. for year ended December 31, 1928, shows total assets of $7,943,605, comparing with $8,150,915 at end of 1927, and profit and loss surplus of $2,326,778, against $2,739,751.

### American Natural Gas

American Natural Gas Corp. reports, for two months ended February 28, 1929, consolidated gross revenues and other income of $3,207,686, compared with $2,727,362 in same period of 1928. Net after taxes was $1,810,696 available for interest, depreciation and depletion, against $1,524,099 in first two months of previous year.

### Sinclair Consolidated

Sinclair Consolidated Oil Corp. declared the regular quarterly dividend of $2 on the preferred payable May 15 to stock of record May 1.

Report of Sinclair Consolidated Oil Corp., for year ended December 31, 1928, shows consolidated profit of $32,865,899 available for depreciation, depletion and amortization reserve, but after interest and taxes, comparing with $24,145,937 in 1927. Net income in 1928 after deducting $19,418,552 for depreciation, depletion and amortization, was $13,447,347, equivalent after 8 per cent preferred dividends, to $2.70 a share on 4,497,165 average number of common shares outstanding during the period and $2.21 a share on 5,500,000 common shares outstanding at end of year. This compares with net income of $5,391,081 or 89 cents a share on 4,509,480 common shares outstanding in 1927.

The report also relates that 70,000 shares of Vacuum Oil stock was received, and is now held in Sinclair treasury, in exchange for holdings in French oil companies. Also, that in October, 1928, directors authorized the sale of 1,130,000 shares of treasury common

## INDEPENDENT OILS ON NEW YORK CURB

**Quotations Compiled by Francis, Bro. & Co., Kennedy Building, Tulsa, Okla.**

| 1926 High | 1926 Low | 1927 High | 1927 Low | 1928 High | 1928 Low | Par value | Stocks | For week ended April 12: Sales | Open | High | Low | Last | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $6.75 | .45 | 2 1/16 | .55 | 1 1/2 | .53 | $5 | Amer. Con. Oilfields | 16,400 | 60 | 61 | 52 | 56 | — 4 |
| .. | .. | 7 1/2 | 2 3/4 | 9 1/2 | 3 1/8 | N.P. | Amer. Maracaibo | 3,000 | 5 1/4 | 5 1/4 | 4 3/4 | 5 | — 3/8 |
| .. | .. | 2 3/4 | 1 | 4 1/2 | 2 1/4 | $10 | Argo Oil | 3,900 | 3 1/2 | 3 3/4 | 3 | 3 3/4 | + 1/8 |
| 85 1/4 | 60 | 40 | 20 1/2 | 55 | 32 3/4 | N.P. | British American | No sales. | | | | | |
| 28 3/8 | 9 1/4 | 28 1/4 | 15 1/2 | 4 1/2 | 3 7/8 | 25c | Carib. Syndicate (new) | 1,000 | 2 3/4 | 2 3/4 | 2 5/8 | 2 3/4 | ..... |
| .. | .. | 58 3/4 | 40 1/4 | 90 7/8 | 54 | $20 | Cities Service | 52,700 | 118 7/8 | 119 | 115 7/8 | 117 | — 2 1/8 |
| .. | .. | 95 3/8 | 87 | 103 1/2 | 94 1/2 | 100 | Cities Service, pfd. | 1,800 | .. | 97 3/8 | 97 | 97 3/8 | ..... |
| .. | .. | 8 7/8 | 7 3/8 | 9 5/8 | 8 7/8 | 10 | Cities Service, pfd. B | 400 | .. | 9 1/4 | 9 | 9 1/4 | + 1/4 |
| 3 1/2 | 1 3/4 | 3 7/8 | 1 1/2 | 3 1/4 | 76 | 1 | Colombia Syndicate | 4,400 | 1 1/4 | 1 1/4 | 1 1/8 | 1 1/8 | + 1/4 |
| .. | .. | 9 3/4 | 6 3/8 | 8 7/8 | 6 1/4 | 10 | Consolidated Royal | 2,700 | 8 | 9 | 7 3/4 | 9 | + 5/8 |
| 16 | 10 | 14 7/8 | 9 1/2 | 17 1/2 | 9 1/2 | N.P. | Creole Syndicate | 15,700 | 9 1/4 | 9 3/8 | 9 | 9 1/8 | — 1/8 |
| .. | .. | 3 | .50 | 3 1/4 | .76 | N.P. | Crown Central | 900 | 1 7/8 | 1 7/8 | 1 3/4 | 1 3/4 | ..... |
| 7 7/8 | 6 3/4 | 12 | 4 | 33 1/2 | 3 1/4 | N.P. | Darby Petroleum | 200 | 4 | 4 | 4 | 4 | ..... |
| .. | .. | 2 1/2 | 74 | 2 1/4 | 1 | N.P. | Derby Oil & Refining | 500 | 4 | 4 | 3 3/8 | 3 7/8 | + 3/8 |
| .. | .. | 16 3/4 | 4 | 21 1/8 | 7 1/2 | N.P. | Derby Oil & Refining, pfd. | 100 | 26 | 26 | 26 | 26 | ..... |
| .. | .. | 2 | .40 | .53 | .15 | N.P. | Gilliland ctfs. | No sales. | | | | | |
| 98 | 92 | 118 | 86 1/4 | 165 | 101 1/8 | $25 | Gulf Oil Corp. | 6,300 | 156 7/8 | 161 | 155 1/4 | 160 1/2 | + 3 |
| $3.00 | .83 | 2 1/2 | .80 | 3 3/8 | 1 | 5 | Intercontinental Pet. | 8,400 | 2 1/8 | 2 1/4 | 1 7/8 | 1 7/8 | — 1/8 |
| .. | .. | 2 1/4 | 1 1/8 | 3 | 1 1/4 | N.P. | Kirby Petroleum | 1,200 | 2 1/8 | 2 1/4 | 2 | 2 | ..... |
| 12 1/4 | 5 3/4 | 10 7/8 | 5 1/2 | 9 3/8 | 5 1/2 | 25 | Leonard Oil & Dev. | 400 | 5 1/4 | 5 1/4 | 5 1/2 | 5 1/8 | — 3/8 |
| 46 | 30 | 59 3/8 | 37 | 69 1/8 | 48 1/8 | $25 | Lone Star Gas | 4,100 | .. | .. | .. | .. | ..... |
| 2 7/8 | 1 | 2 7/8 | .80 | 1 7/8 | .50 | 1 | Magdalena Syndicate | 3,300 | 66 | 70 | 60 | 65 | — 5 |
| 34 | 12 1/2 | 52 | 12 | 48 1/2 | 32 | N.P. | Margay Oil | No sales. | | | | | |
| 8 | 5 1/2 | 12 1/2 | 5 | 8 | 2 3/4 | N.P. | Mexico-Ohio Oil | 100 | 4 1/2 | 4 1/2 | 4 1/2 | 4 1/2 | — 1/4 |
| 1 3/4 | 1 1/8 | 1 1/2 | 1 | 1 3/4 | .76 | $1 | Mountain & Gulf | 2,000 | 1 1/4 | 1 3/8 | 1 1/8 | 1 1/8 | — 1/8 |
| 26 | 23 | 29 1/4 | 22 3/4 | 28 7/8 | 19 1/2 | 10 | Mountain Producers | 5,300 | 19 1/4 | 19 1/2 | 18 5/8 | 19 1/2 | + 1/8 |
| 6 5/8 | 5 | 5 7/8 | 4 5/8 | 5 5/8 | 4 1/4 | 5 | New Bradford | 2,200 | 4 1/2 | 4 1/4 | 3 1/8 | 4 | ..... |
| .. | .. | 16 | 9 1/4 | 11 7/8 | 7 1/2 | 1 | New Mex. & Ariz. | 800 | 7 3/4 | 7 3/4 | 7 1/4 | 7 1/4 | — 1/2 |
| .. | .. | 12 3/4 | 9 1/2 | 14 1/4 | 8 1/2 | N.P. | North Central Texas | 1,000 | .. | .. | .. | .. | ..... |
| 10 1/8 | 5 7/8 | 9 3/8 | 3 1/4 | 6 | 2 1/8 | N.P. | Pandem | 3,300 | 2 5/8 | 2 5/8 | 2 3/8 | 2 3/8 | + 1/8 |
| 12 1/4 | 11 3/4 | 12 1/2 | 7 | 15 5/8 | 8 1/2 | N.P. | Pantepec Oil | 2,400 | 9 | 9 | 8 1/4 | 8 1/4 | — 5/8 |
| 22 3/4 | 12 | 13 1/2 | 5 1/8 | 7 3/4 | 4 7/8 | N.P. | Pennok Oil | 200 | 4 7/8 | 5 | 4 7/8 | 5 | + 1/4 |
| 17 | 8 1/2 | 24 3/8 | 7 | 18 | 4 7/8 | 25 | Red Bank Oil | 1,500 | 12 1/2 | 12 1/2 | 11 1/2 | 11 1/2 | ..... |
| 30 1/4 | 12 | 15 1/2 | 3 1/2 | 12 7/8 | 4 1/8 | N.P. | Reiter-Foster | 1,600 | 5 3/4 | 5 7/8 | 5 1/4 | 5 1/4 | — 1/2 |
| 7 | 4 1/2 | 7 | 4 1/2 | 12 | 4 1/8 | N.P. | Ryan Consolidated | 600 | 8 | 8 3/8 | 7 3/8 | 7 3/8 | ..... |
| 10 | 7 1/8 | 8 | 5 1/4 | 7 1/4 | 5 1/2 | $10 | Salt Creek Cons. | 800 | 4 | 4 | 3 5/8 | 3 5/8 | — 3/8 |
| 35 | 24 1/8 | 35 1/2 | 27 1/4 | 35 | 23 1/8 | 10 | Salt Creek Prod. | 4,000 | 23 1/4 | 23 3/4 | 22 5/8 | 23 3/4 | + 5/8 |
| 6 7/8 | 1 1/4 | 7 | 1 1/4 | 3 1/2 | 1 | 5 | Savoy Oil | 500 | 2 | 2 | 2 | 2 | — 1/4 |
| 27 | 7 5/8 | 26 1/2 | 17 | 22 7/8 | 13 | 10 | Tidal Osage | 3,000 | 14 | 16 3/8 | 14 | 15 1/4 | + 1 3/8 |
| 25 3/4 | 7 5/8 | 23 3/4 | 15 | 21 1/4 | 13 1/8 | 10 | Tidal Osage, nonvoting | 5,300 | 13 7/8 | 15 1/2 | 13 7/8 | 15 1/2 | + 2 1/8 |
| 92 | 63 1/2 | 92 | 63 1/2 | 93 3/4 | 75 | 100 | Transcontinental, pfd. | No sales. | | | | | |
| 8 | 4 1/2 | 7 5/8 | 4 1/4 | 9 1/8 | 4 3/4 | 5 | Venezuelan Petrol | 3,100 | 4 7/8 | 5 | 4 3/4 | 4 3/4 | ..... |
| 8 1/8 | 5 1/2 | 8 | 4 3/4 | 8 1/4 | 4 7/8 | $1 | Woodley Petroleum | 2,800 | 6 3/8 | 6 5/8 | 6 | 6 1/8 | — 3/8 |
| 6 1/2 | 6 | 6 | 1 3/4 | 8 3/8 | 2 1/8 | 25 | Y Oil & Gas (new) | 900 | 2 7/8 | 3 | 2 7/8 | 3 | ..... |

# TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

**Quotations Compiled by Francis, Bro. & Co., Members of New York Stock Exchange, Kennedy Building, Tulsa, Okla.**

| 1926 High | 1926 Low | 1927 High | 1927 Low | 1928 High | 1928 Low | | Listed capital | Par value | Stocks— | Div. rate | Last paid | For week ended April 12 Sales | Open | High | Low | Last | Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32⅞ | 24¼ | 37⅝ | 27⅝ | 43⅞ | 27⅛ | (sh) | 922,075 | N.P. | Amerada Corp. | 50cQ | Oct. 31, 28 | 11,000 | 33 | 34½ | 32¼ | 34¼ | + 1¾ |
| 74 | 39⅞ | 82⅛ | 35⅛ | 85 | 51¼ | (sh) | 209,180 | N.P. | American Republics Corp. | ..... | ..... | 11,100 | 56¾ | 59⅞ | 52⅞ | 59⅝ | + 3⅛ |
| 60 | 44¾ | 50¼ | 35 | 53⅜ | 37½ | | $57,260,300 | $25 | Associated Oil | 50cQ | Dec. 31, 28 | 17,000 | 45⅛ | 45⅛ | 43¼ | 43¼ | — 4 |
| 128⅜ | 97 | 131⅜ | 104 | 66⅜ | 50 | | 50,000,000 | 25 | Atlantic Refining | 25cQ | Dec. 15, 28 | 103,500 | 57⅜ | 58½ | 55⅝ | 58¼ | + ⅜ |
| 33½ | 23½ | 35½ | 20¾ | 53 | 20 | | 35,194,000 | 25 | Barnsdall Corp. | 50cQ | Feb. 5, 29 | 82,300 | 44 | 45¼ | 42¾ | 45 | + ⅞ |
| 94¼ | 50 | 96¾ | 65 | 94⅞ | 68 | | 20,785,400 | 100 | General Asphalt | ..... | ..... | 11,900 | 67¼ | 73½ | 65¾ | 73½ | + 7 |
| 72 | 50¼ | 175¾ | 60⅛ | 167 | 79 | | 25,000,000 | 100 | Houston Oil | ..... | ..... | 38,100 | 101 | 103½ | 95 | 103 | + 2½ |
| 34 | 19⅝ | 32¾ | 17⅝ | 38⅜ | 21¾ | (sh) | 959,457 | N.P. | Independent Oil & Gas | 50cQ | Jan. 31, 29 | 31,000 | 33⅞ | 35⅞ | 33⅛ | 35⅞ | + 1⅞ |
| 12¾ | 7½ | 12⅛ | 7⅝ | 39⅝ | 9 | | 8,203,080 | $10 | Indian Refining | ..... | May 31, 24 | 238,900 | 47⅝ | 52⅜ | 45¼ | 50⅞ | + 4⅛ |
| 25⅞ | 16½ | 37¾ | 20½ | 39⅛ | 27⅜ | (sh) | 3,992,122 | N.P. | Lago Oil & Transport | ..... | May 1, 27 | 5,100 | 28 | 32⅜ | 28 | 32⅜ | + 2⅛ |
| 19⅞ | 12 | 18⅛ | 10 | 19¾ | 9⅜ | (sh) | 1,237,078 | N.P. | Louisiana Oil Refining | ..... | ..... | 11,200 | 15 | 15⅜ | 14¼ | 15⅜ | + ⅜ |
| 28 | 16½ | 22¾ | 12 | 25½ | 12½ | (sh) | 330,000 | N.P. | Maracaibo Oil | ..... | ..... | 800 | 14 | 14 | 14 | 14 | — ⅛ |
| 63⅜ | 49¼ | 58½ | 31 | 49¾ | 33 | (sh) | 2,316,692 | N.P. | Marland Oil Co. | ..... | Mar. 31, 27 | 63,200 | 42½ | 42¾ | 39¾ | 42½ | + 1 |
| 13¾ | 6 | 9¼ | 3 | 73 | 4⅝ | (sh) | 945,939 | N.P. | Mexican Seaboard | ..... | Dec. 15, 20 | 87,900 | 50 | 51¼ | 46 | 50 | — ½ |
| 37 | 20½ | 39⅜ | 25½ | 44½ | 25⅛ | (sh) | 1,357,461 | N.P. | Mid-Continent Petroleum | 50cQ | Feb. 15, 29 | 29,000 | 34¼ | 35⅝ | 33¾ | 35⅜ | + ⅞ |
| 104¼ | 90 | 105 | 97 | 120½ | 103¼ | | $6,718,000 | $100 | Mid-Continent Petroleum pfd. | $1.75Q | Sept. 1, 28 | No sales. | | | | | |
| 2½ | ½ | 3¾ | 1⅝ | 7⅜ | 2⅜ | | 24,298,850 | 10 | Middle States | ..... | July 1, 23 | 5,500 | 4⅜ | 4⅜ | 4 | 4⅛ | + ⅛ |
| 76½ | 56⅛ | 65⅞ | 40⅛ | 54⅞ | 38¼ | | $48,807,400 | $50 | Pan American P. & T. | ..... | Oct. 20, 27 | 28,300 | 52¾ | 58½ | 52 | 57 | + 6½ |
| 78⅜ | 56⅞ | 66⅜ | 40¼ | 58⅞ | 37¾ | | 121,097,900 | 50 | Pan American P. & T. B. | ..... | Nov. 15, 24 | 286,400 | 53⅞ | 60 | 51⅝ | 60 | + 7 |
| 46 | 30 | 37⅞ | 16¾ | 28⅜ | 15½ | (sh) | 400,000 | N.P. | Pan American Western B | ..... | Jan. 30, 27 | No sales. | | | | | |
| 32 | 4½ | 18⅞ | 8 | 21⅜ | 11½ | (sh) | 198,770 | N.P. | Panhandle P. & R. | ..... | ..... | 1,500 | 12¼ | 13⅝ | 12¼ | 13⅝ | + 1⅞ |
| 99⅜ | 51 | 83 | 54 | 108 | 70 | | $2,935,200 | $100 | Panhandle P. & R. pfd. | ..... | July 2, 23 | 100 | 62 | 62 | 62 | 62 | — 2½ |
| 57⅜ | 40 | 60¼ | 36¼ | 53⅞ | 35¼ | (sh) | 2,406,796 | N.P. | Phillips Petroleum | 37½cQ | Jan. 2, 29 | 23,900 | 41 | 42⅛ | 40½ | 42⅛ | + ¼ |
| .... | .... | 1⅛ | ½ | 5¼ | ½ | | $29,622,925 | $25 | Pierce Oil Corp. | ..... | ..... | 5,100 | 2⅞ | 3 | 2¾ | 3 | ..... |
| 7 | 2¼ | 5½ | 2½ | 7 | 3½ | (sh) | 2,500,000 | N.P. | Pierce Petroleum | ..... | ..... | 3,600 | 5 | 5 | 4¾ | 4⅞ | — ⅛ |
| 60¼ | 48 | 55½ | 45⅝ | 68 | 46 | | 60,000,000 | 25 | Prairie Oil & Gas | ..... | Aug. 31, 27 | 9,500 | 61¾ | 61¾ | 60½ | 61¼ | + ½ |
| 137½ | 122½ | 190 | 130¾ | 280 | 172 | | $101,250,000 | $25 | Prairie Pipe | ..... | ..... | 3,200 | 56⅞ | 56⅞ | 56⅛ | 56½ | — ½ |
| 20¾ | 11 | 33⅞ | 16¾ | 29⅞ | 16 | | $37,450,850 | $50 | Producers & Refiners | ..... | Sept. 15, 23 | 1,000 | 20⅜ | 22 | 20 | 22 | + 1½ |
| 41⅜ | 30¾ | 50 | 36⅞ | 49⅝ | 41 | | 2,845,350 | 50 | Producers & Refiners pfd. | ..... | May 1, 25 | 9,000 | 43 | 43 | 43 | 43 | — 1¾ |
| 31 | 25¼ | 33½ | 25 | 31⅝ | 19 | | 75,959,350 | 25 | Pure Oil Co. | 25cQ | Dec. 1, 28 | 16,000 | 26¼ | 26½ | 25½ | 26¼ | ..... |
| 27½ | 22 | 28⅝ | 25⅜ | 56 | 23 | | 47,025,000 | $25 | Richfield Oil | ..... | Nov. 15, 28 | 13,200 | 43 | 44⅞ | 41¼ | 44¾ | + 1½ |
| 57⅜ | 47⅜ | 54½ | 44¼ | 64 | 44⅝ | (sh) | 611,303 | 13.40 | Royal Dutch, N. Y. shares | 50eQ | Jan. 10, 29 | 1,600 | 53 | 53 | 52¼ | 52 | + ¼ |
| 48⅝ | 40½ | 47⅞ | 41⅜ | 57½ | 40⅝ | (sh) | £30,000,000 | £1 | Shell Transport & T. | $1.455 | July 23, 28 | 200 | 46½ | 46½ | 46½ | 46½ | + 1 |
| 31 | 24 | 31¾ | 24⅝ | 39¼ | 23¼ | (sh) | 20,000,000 | N.P. | Shell Union Oil | 35cQ | Dec. 31, 28 | 34,500 | 29⅞ | 30⅝ | 28¾ | 30 | + ½ |
| 28⅝ | 15⅛ | 26⅜ | 14¼ | 27¼ | 18⅛ | | $8,357,000 | $10 | Simms Petroleum | 10cQ | Dec. 15, 28 | 8,900 | 21 | 22 | 19¾ | 22 | + 1⅞ |
| 24⅞ | 16¾ | 22⅜ | 15 | 46¾ | 17⅜ | (sh) | 4,501,915 | N.P. | Sinclair Consolidated | ..... | ..... | 132,600 | 38⅞ | 39½ | 37 | 39¼ | ..... |
| 99½ | 90 | 104½ | 97 | 110 | 102½ | | $16,604,600 | $100 | Sinclair Consolidated pfd. | $2Q | Nov. 15, 28 | 300 | 109½ | 109½ | 109 | 109 | ..... |
| 37⅛ | 26⅝ | 37⅜ | 24⅛ | 42⅝ | 25 | | 27,396,590 | 25 | Skelly Oil Co. | 50cQ | Dec. 15, 28 | 45,800 | 38½ | 40¾ | 38 | 40¾ | + 2¼ |
| 63⅝ | 51½ | 60¾ | 50⅜ | 80 | 53 | (sh) | 12,594,098 | N.P. | Standard Oil of California | 65½cQ | Dec. 15, 28 | 164,500 | 79⅝ | 80⅜ | 75¼ | 80 | + ¾ |
| 46⅜ | 37½ | 41⅜ | 35½ | 59⅜ | 37¾ | | $611,120,700 | $25 | Standard Oil of New Jersey | 25cQ* | Dec. 15, 28 | 248,300 | 43⅝ | 59¾ | 55½ | 59¾ | + 1½ |
| 47⅛ | 30⅜ | 34⅛ | 29¾ | 44¼ | 28¾ | | 427,973,275 | 25 | Standard Oil of New York | 40cQ | Dec. 15, 28 | 135,900 | 43⅝ | 44½ | 42 | 44 | ..... |
| 41⅝ | 30⅛ | 34⅞ | 30 | 77 | 31½ | (sh) | 1,206,073 | N.P. | Sun Oil | 25cQ | Dec. 15, 28 | 3,500 | 60¼ | 64⅞ | 59 | 64½ | + 4 |
| 5¼ | 1 | 6½ | 3⅛ | 14¼ | 2½ | (sh) | 1,267,000 | N.P. | Superior Oil Corp. | ..... | Dec. 20, 20 | 37,500 | 9 | 9½ | 8½ | 9½ | + ½ |
| 58 | 48 | 58 | 45 | 74¾ | 50 | | $211,076,650 | $25 | The Texas Corporation | 75cQ | Jan. 1, 29 | 52,300 | 64⅛ | 66¼ | 62⅝ | 66 | + 1 |
| 19½ | 12 | 18⅞ | 12 | 26⅝ | 12⅛ | | 8,380,340 | 10 | Texas Pacific Coal & Oil | ..... | Jan. 3, 28 | 23,800 | 21¼ | 21½ | 19¼ | 21½ | + 1¼ |
| 39¼ | 27 | 29⅛ | 19 | 41½ | 19⅝ | (sh) | 2,168,410 | N.P. | Tide Water Oil Co. | 20cQ | Dec. 15, 28 | 800 | 33½ | 33½ | 31⅜ | 33 | + ½ |
| 103 | 87¼ | 90⅛ | 85 | 100⅛ | 86 | | $20,705,200 | $100 | Tide Water Oil Co. 5% pfd. | $1.25Q | Nov. 15, 28 | 500 | 86½ | 86½ | 86¼ | 86¼ | — 2 |
| 27 | 20⅞ | 19½ | 15¾ | 25 | 14⅜ | (sh) | 4,796,158 | N.P. | Tide Water Associated | ..... | Aug. 1, 27 | 20,300 | 20¼ | 20⅜ | 18⅞ | 20⅝ | + ⅝ |
| 5½ | 3 | 10⅜ | 3¾ | 14⅜ | 7¼ | (sh) | 3,742,029 | N.P. | Transcontinental Oil | ..... | ..... | 35,200 | 10¼ | 10⅞ | 10 | 10⅜ | + ⅝ |
| 58⅜ | 37¼ | 56½ | 39⅝ | 58 | 42¾ | | $94,798,100 | $25 | Union Oil of California | 50cQ | Nov. 10, 28 | 17,700 | 50½ | 52⅜ | 49¾ | 52¼ | + 1¼ |
| 120⅜ | 84¼ | 127½ | 94 | 128⅛ | 110 | | 31,061,200 | 100 | Union Tank Car Co. | $1.25Q | Dec. 1, 28 | 1,000 | 136 | 137 | 132½ | 134 | — 2 |
| 30⅛ | 23½ | 34½ | 24½ | 44⅞ | 26 | (sh) | 356,000 | N.P. | Warner Quinlan | 50cQ | Jan. 2, 29 | 9,100 | 34¼ | 34¼ | 32½ | 34¼ | + ⅛ |
| 29¾ | 25⅛ | 27½ | 20 | 38 | 20⅛ | (sh) | 490,000 | N.P. | White Eagle Oil & Refining | 50cQ | Jan. 20, 29 | 7,700 | 37¼ | 37¼ | 35¼ | 36⅛ | — ⅞ |
| | | | | | | | | | Wilcox Oil & Gas | ..... | ..... | 1,900 | 23 | 23½ | 22⅛ | 23 | — ⅛ |

*Also extras.

# STANDARD OIL STOCKS ON NEW YORK CURB

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 16 | 21⅝ | 17⅞ | 22⅜ | 14⅞ | | £4,126,460 | £1 | Anglo-American Oil | ..... | June 6, 28 | 1,400 | 16⅝ | 16⅝ | 16⅛ | 16⅝ | + ⅛ |
| .... | .... | 3¾ | ¾ | 5 | 1¼ | (sh) | 500,000 | N.P. | Atlantic Lobos | ..... | ..... | No sales. | | | | | |
| 76 | 65 | 69 | 50 | 56½ | 44½ | | 1,000,000 | 25 | Borne Scrymser | $18.A. | Oct. 15, 28 | No sales. | | | | | |
| 59½ | 42 | 60 | 45 | 76 | 53 | | 10,000,000 | 50 | Buckeye Pipe Line | $1Q | Dec. 15, 28 | 200 | 71 | 71 | 71 | 71 | ..... |
| 82½ | 65 | 126 | 76½ | 161 | 117½ | | 3,000,000 | 25 | Chesebrough Mfg. | $1Q | Dec. 28, 28 | 100 | 158 | 158 | 158 | 158 | — 1½ |
| 25⅞ | 17½ | 22⅝ | 16¼ | 23 | 16 | | 36,057,840 | 10 | Continental Oil | ..... | Dec. 15, 27 | 64,100 | 24⅝ | 25 | 23⅝ | 24⅝ | + ⅛ |
| 137 | 102 | 137 | 89 | 114 | 67 | | 1,500,000 | 50 | Cumberland Pipe Line | $1A | Dec. 15, 28 | No sales. | | | | | |
| 63¾ | 43 | 68½ | 47 | 88 | 64⅛ | | 5,000,000 | 100 | Eureka Pipe Line | $1Q | Nov. 1, 28 | No sales. | | | | | |
| 32½ | 9⅞ | 13½ | 3½ | 13 | 4¼ | | 16,000,000 | 100 | Galena Signal Oil | ..... | June 30, 25 | 200 | 5½ | 5½ | 5½ | 5½ | ..... |
| 68½ | 52 | 68½ | 54 | 114⅜ | 59¼ | | 73,117,577 | 25 | Humble Oil & Refining | 30cQ* | Jan. 1, 29 | 1,700 | 108¼ | 112½ | 107 | 112 | + 3 |
| 144½ | 125½ | 182 | 123¾ | 290½ | 176½ | | 20,000,000 | 100 | Illinois Pipe Line | 10%S.A. | Dec. 15, 28 | 100 | 309¾ | 309¾ | 308 | 308 | + 3 |
| .... | .... | 64¾ | 37¾ | 104 | 56¾ | (sh) | 6,458,267 | N.P. | Imperial of Canada | 25cQ | Dec. 1, 28 | 19,300 | 105⅞ | 114 | 104 | 113⅜ | +18⅝ |
| 72½ | 58 | 94½ | 61 | 91⅞ | 74⅜ | | $5,000,000 | $50 | Indiana Pipe Line | $1Q | Feb. 15, 29 | 400 | 92½ | 96¾ | 92 | 96¾ | + 2¼ |
| 35½ | 28¾ | 39 | 28¼ | 55 | 35 | (sh) | 7,123,444 | N.P. | International Petroleum | 25c | Nov. 30, 28 | 15,500 | 55 | 56½ | 53⅛ | 55½ | — ¼ |
| 20¾ | 12½ | 24 | 13½ | 32⅜ | 19⅜ | | $6,363,350 | 12.50 | National Transit Co. | 25c | Dec. 15, 28 | 2,300 | 23¼ | 23¼ | 22¼ | 23⅛ | — ⅜ |
| 51½ | 27¼ | 44½ | 31¼ | 75 | 38½ | | 5,000,000 | 100 | New York Transit | ..... | July 15, 26 | No sales. | | | | | |
| 80½ | 64 | 100 | 70 | 69 | 56½ | | 2,000,000 | 50 | Northern Pipe Line | $3S.A. | Jan. 2, 29 | No sales. | | | | | |
| 67¾ | 55¾ | 67⅞ | 52 | 84 | 58½ | | 60,000,000 | 25 | Ohio Oil Co. | 50cQ* | Dec. 15, 28 | 1,200 | 67½ | 68 | 67 | 67¼ | — ⅝ |
| 24¾ | 15 | 39 | 12 | 84 | 28 | | 10,000,000 | 25 | Penn Mex. Fuel | $1.25 | Dec. 15, 28 | 300 | 30⅛ | 30½ | 30⅛ | 30½ | ..... |
| 220 | 84½ | 201½ | 175½ | 220 | 167 | | 4,000,000 | 100 | Solar Refining | $5S.A. | Dec. 20, 28 | No sales. | | | | | |
| 74½ | 61½ | 27¼ | 15½ | 19 | 15 | | 1,000,000 | 10 | Southern Pipe Line | $2 | Dec. 1, 27 | 3,100 | 16⅞ | 21⅜ | 16½ | 21⅜ | + 5¾ |
| 50 | 34½ | 41½ | 35 | 71⅞ | 36¾ | | 2,000,000 | 25 | South Penn Oil | 50cQ | Dec. 31, 28 | 5,800 | 48 | 48⅛ | 46 | 48 | ..... |
| 56 | 47⅛ | 83 | 55½ | 102 | 70 | | 3,500,000 | 100 | Southwest Pa. Pipe Lines | $1Q | Oct. 1, 28 | 150 | 65¼ | 65¼ | 65 | 65 | ..... |
| 70½ | 60½ | 81½ | 64⅝ | 95⅞ | 70⅞ | | 228,415,463 | 25 | Standard Oil of Indiana | 62½cQ | Dec. 15, 28 | 22,800 | 59 | 59⅝ | 58⅝ | 59⅜ | — ¼ |
| 36½ | 16½ | 20⅞ | 14⅝ | 27⅜ | 15 | | 8,000,000 | 25 | Standard Oil of Kansas | ..... | June 16, 24 | 300 | 19¾ | 19¾ | 19¼ | 19¼ | — ⅞ |
| 134⅜ | 108 | 130 | 111½ | 179¾ | 122¼ | | 17,012,559 | 10 | Standard Oil of Kentucky | $1Q | Dec. 31, 28 | 3,000 | 39⅞ | 40 | 39 | 39⅞ | ..... |
| 51⅝ | 42 | 49½ | 40 | 54⅞ | 39⅞ | | 4,559,850 | 25 | Standard Oil of Nebraska | 63cQ | Dec. 20, 28 | 200 | 48 | 48⅛ | 48 | 48⅛ | + ⅛ |
| 372 | 288 | 87½ | 72 | 134 | 71 | | 14,000,000 | 25 | Standard Oil of Ohio | 62½cQ | Jan. 2, 29 | 6,500 | 115½ | 120 | 115 | 117 | + 1 |
| 21 | 15 | 21 | 14½ | 23½ | 16 | | 861,000 | 25 | Swan Finch Co. | ..... | Nov. 1, 19 | No sales. | | | | | |
| 109⅜ | 90¼ | .... | .... | 111 | 72 | | 125,619,000 | 25 | Vacuum Oil | 75cQ | Dec. 20, 28 | 6,700 | 123 | 124½ | 121⅝ | 124½ | + ¼ |

*Also extras.

stock for cash at $30 a share. This is the stock which was acquired by the Chicago interests headed by Arthur Cutten.

### Indian Refining

The consolidated statement of operations and surplus of the Indian Refining Co. and subsidiaries for the year ended December 31, 1928, shows net sales, $18,370,311.46; net profit on sales, before depreciation, $1,769,616.87; net profit from operations, $651,891.92; gross surplus, $1,482,966.21; profit and loss surplus, December 31, 1928, $999,234.96.

### Imperial Oil Subsidiaries

Imperial Oil, Ltd., of Toronto is becoming, directly and through its subsidiaries, an increasing factor in oil development in the Canadian West. Information as to the relationship of these subsidiaries has just been made public.

Imperial's early development compaign, which did not include the Turner Valley Field, was carried on through the Northwest Company, though in reports of operations the Imperial name was generally used. Imperial entered the Turner Valley first through the organization of Royalite Oil Co., which is today the principal development and producing company in the West. Imperial controls Royalite through majority stock ownership.

Foothills Oil & Gas Co. is a direct subsidiary of Imperial, operating in Turner Valley, its holdings extending over a structural length of close to 4

miles. Southwest Petroleum, Ltd., is a subsidiary of Foothills.

Dalhousie Oil Co. is controlled by Royalite Oil Co., which owns a majority of the Dalhousie stock. Mid-West Oil Co., which, pending reorganization, has not been active in development, holds considerable Turner Valley acreage, and is controlled by Dalhousie.

Home Oil Co. of Vancouver, B. C., is independent of stock control, but its acreage is being developed by Imperial Oil, Ltd., under an arrangement which reimburses Imperial for actual outlay plus 10 per cent, and gives Home a royalty on production.

Associated Oil & Gas Co. and Baltac Oils have arranged for development of their leases on a similar basis, while the newly-organized Lowery Petroleum, Ltd., has arranged with Imperial for similar development of its acreage.

Operations of the Royalite Oil Co. and other Imperial subsidiaries are handled by the Imperial geological and drilling staff, under the direction of J. H. McLeod, western production manager for Imperial.

**Texas Pacific**

Texas Pacific Coal & Oil Co. pamphlet report for the year ended December 31, 1928, shows consolidated net income of $201,793 after taxes, interest, depreciation, depletion, amortization, etc., equivalent to 24 cents a share (par $10) earned on 844,804 shares of stock. This compares with $314,088 or 37 cents a share in 1927. E. J. Marston, president of Texas Pacific Coal & Oil Co., says it has been the policy of the company to co-operate in the movement for stabilization of conditions in the petroleum industry. A program of sales expansion was continued in 1928 and company added several bulk stations to its original schedule. Forty-five per cent of total gasoline manufactured last year was distributed through company stations, in addition to a satisfactory percentage of kerosene and motor oils.

**Tidal-Osage-Darby**

The stockholders of the Tidal-Osage Oil Co., on May 14 will vote on the proposed merger with the Darby Petroleum Co. Consolidation will mean the passing of the Tidal-Osage Oil Co. and will increase the importance of the Darby Petroleum Co. which operates in the Mid-Continent Field.

J. F. Darby will continue as president and directing head of the consolidated corporation according to announcement. J. F. Russell, Jr., is vice president; A. C. Boyce, secretary, and D. C. Bothwell is treasurer and manager. Three additional directors go on the Darby board: E. H. Sarlin, president of the Tidal companies; W. C. Franklin, vice president of the Tidal companies, and M. P. Williams, former president and now vice president of the Tidal companies.

The enlarged Darby company will have 1,250,000 shares of no par value stock, the increase being 631,319 shares, that being the actual number of shares of Tidal-Osage. Tidal-Osage par was $10. The merger on a share for share basis is regarded as equal to a $6,000,000 proposition.

Tidal-Osage has 5,200 bbls. a day of net production and Darby 3,400 bbls., making the enlarged Darby have 8,600 bbls. a day in Oklahoma, Kansas and Texas. Combined leaseholds and fee lands of the Darby will now be 144,000 acres.

## PANHANDLE FIELDS

(Continued from Page 39)

of SE cor. NW. Section 91, Block 17, H.&G.N.R.R. Survey, made 34,000,000 feet of gas at 1,830-97 feet. Wischkampers' No. 1 Adamson, located C NE SE, Section 50, Block 17, H.&G.N.R.R. Survey, made 20,000,000 feet of gas at 1,775-1,800 feet.

**RANGER COMPLETIONS**
**Week ending April 13**
**Brown County**

M. T. Anderson's No. 8 Leatherwood made 20 bbls. at 1,150-64 feet and was drilled to a total depth of 1,174 feet. Christy Breeding and others' No. 1 Jones made 300,000 feet of gas at 1,168-80 feet and was drilled to a total depth of 1,203 feet. Humble Oil & Refining Co.'s No. 11 Byler was shot with 5 quarts at 1,302-16 feet and made 15 bbls. oil. Its No. 21 Hodnett-A was dry and abandoned at 1,218 feet. Watten and others' No. 1 Duff made 50 bbls. after having been shot with 3 quarts at 1,156-64 feet. G. L. Gray's No. 1 Evans was dry and abandoned at 2,004 feet. Harrt & Cole, Inc.'s No. 1 Dixon was dry and abandoned at 374 feet.

**Callahan County**

Barmhart and others' No. 1 McFarlane was dry and abandoned at 1,070 feet. Drew Beams' No. 1 Snyder made 5 bbls. at 1,019-40 feet.

**Coleman County**

Gwinnup and others' No. 1 Gates was dry and abandoned at 1,680 feet. Jackson & Veihl's No. 1 Davis was dry and abandoned at 3,330 feet. Roth & Faurot's No. 1 Golson was dry and abandoned at 2,300 feet. Barnsdall Oil Corp.'s No. 1 Tholl Oil Co. was dry and abandoned at 2,250 feet. E. L. Chapman's No. 2 Fuller was dry and abandoned at 1,995 feet. Cunningham and others' No. 12 Jennings-C made 5,500,000 feet of gas at 1,146-59 feet and sprayed oil at 1,165-68 feet. E. J. Hunter's No. 1 Baugh was dry and abandoned at 1,220 feet. Roth & Faurot's No. 1 Cox was dry and abandoned at 1,835 feet.

**Eastland County**

Goodwin and others' No. 1 Hazzard was temporarily abandoned at 1,660 feet. Taylor and others' No. 1 Marshall was dry and abandoned at 3,400 feet. Teatsorth and others' No. 1 Harbin was shot with 30 quarts at 1,531-48 feet and made 12 bbls. This was drilled to a total depth of 1,965 feet and plugged back to 1,560 feet. Belva Oil Co.'s No. 6 Good made 15 bbls. at 3,675-84 feet and was drilled to a total depth of 3,815 feet. Hoffman & Page's No. 1 Butler was dry and abandoned at 1,343 feet. McLester Oil Co.'s No. 6 Thorp was shot with 15 quarts at 3,591-3,602 feet and made 25 bbls. States Oil Corp.'s No. 8 Calvert made 25 bbls. at 1,899-1,906 feet.

**Shackelford County**

Crabb & McNeil's No. 2 Matthews was dry and abandoned at 1,212 feet. Engle Brothers' No. 3 Matthews-A made 260 bbls. at 1,131-52 feet. Gillman & McMurray's No. 1 Matthews was dry and abandoned at 1,043 feet. Grisham-Hunter Corp.'s No. 1 Davis was dry and abandoned at 1,711 feet. Its No. 1 Davis-A was dry and abandoned at 1,752 feet. Loggie & Arndt's No. 1 Matthews was dry and abandoned at 1,115 feet. Midland Oil Co.'s No. 1 Davis made 8 bbls. at 1,628-38 feet. Montcrief and others' No. 1 Gustafason was dry and abandoned at 2,016 feet. Petroleum Production Co.'s No. 3 Davis made 37 bbls. at 1,633-45 feet. Tannehill and others' No. 2 Hill was dry and abandoned at 895 feet. Their No. 1 Whitney was dry and abandoned at 753 feet. Texas Consolidated Oil Co.'s No. 1 Jackson was dry and abandoned at 1,002 feet.

**Stephens County**

Root and others' No. 2 Hitson was dry and abandoned at 3,295 feet. Texas Fidelity Oil Corp.'s No. 1 Bargsley was dry and abandoned at 2,050 feet.

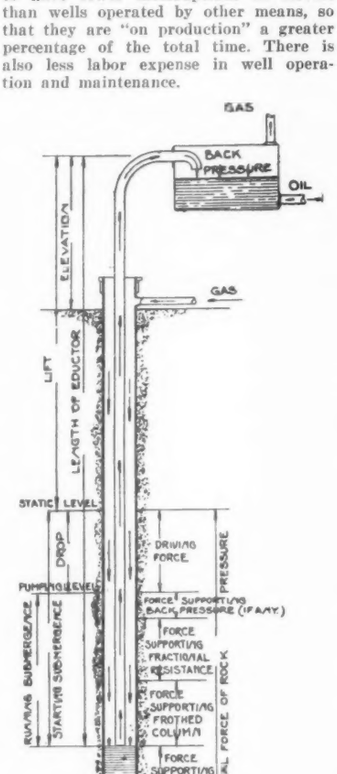
## RECOVERY OF OIL BY AIR AND GAS LIFT

(Continued from Page 31)

than is the case in naturally flowing wells. Where it is desired to hold bottom water or heaving sand in check, the high back pressures that may be maintained on the well give the gas lift a considerable advantage. At the same time, the gas flowing into the well with the oil is fully expanded, so that the efficiency of expulsion is higher than is possible by "beaning" at the delivery end of the flow tubing.

**Particularly Advantageous**

Due to its high capacity, the gas lift is capable of lifting fluid from a well at a more rapid rate than is possible by other means. Where wells are capable of producing larger quantities of oil than can be handled by plunger pumping, or where a large volume of water must be produced with the oil, the gas lift is particularly advantageous. It is also capable of handling fluids containing large amounts of sand in suspension, and is helpful where sand conditions render plunger pumping difficult. Due to the absence of moving parts, the gas lift has an advantage over mechanical lifting devices in this regard. Though the daily cost of well operation is higher for the gas lift than for the plunger pump, due to the greater capacity of the former, the unit cost of production is often considerably lower. Gas lift wells are likely to have fewer interruptions in service than wells operated by other means, so that they are "on production" a greater percentage of the total time. There is also less labor expense in well operation and maintenance.




*Illustrating submergence and lift; also the force necessary to support operation of the lift.*

Where a natural gasoline extraction plant is in operation, a greater volume of gas and often a richer gas is provided than is produced by other methods of oil recovery, and a higher yield of gasoline is therefore secured. The ultimate return is greater in any case, due to the higher market price commanded by the gasoline produced in comparison with what it would bring if left in the crude. Recycling of the gas, which is possible when a gasoline recovery plant is used in conjunction with the gas lift, leads to maximum economy in lifting cost and a high degree of efficiency in gas conservation.

On the whole, the gas lift would appear to possess certain very definite advantages and comparatively few disadvantages. Many believe that it is a method of oil recovery that is destined to play an important part in the oil industry of the future. However, the art of gas lifting is as yet under developed and much additional experimentation and study of the factors involved will be necessary before field practice becomes standardized and the process can be applied with assurance of success and with maximum efficiency in oil recovery.

**Air and Gas Lifts Distinguished**

A gas is "an aeriform elastic fluid tending to expand indefinitely." Air, therefore, is a "gas."

There is no essential difference between an air lift and a gas lift so far as the lifting effect is concerned. An air lift is a gas lift in which the particular gas being employed as a lifting medium is air. Air, natural gas and residue gases, containing methane, ethane, and small admixtures of the heavier hydrocarbon gases, are employed for lifting oil. When air is employed in an oil well it is commonly termed an air lift, although the issuing gas is a mixture of air, methane, ethane, carbon dioxide, etc., since the production of oil is almost always accompanied by a certain amount of natural gas which issues with the oil and air.

It has been suggested that because of its lower solubility in crude petroleum, air is preferable from the standpoint of mechanical efficiency to natural gas as a medium for gas lift operation. Other considerations, however, will generally make natural gas preferable if it be available in sufficient quantity and at moderate cost. The use of air as a circulating medium, for example, results in the formational gas entering the well with the oil being contaminated, often forming explosive mixtures that are dangerous to use for boiler or fuel purposes. Extraction of the gasoline vapor from gas-air mixtures presents no insurmountable difficulties, but mere dilution of the natural gas with air, will sometimes result in a blend that is too lean to be profitably handled. On the other hand, if natural gas is used as the circulating medium, it takes up additional vapor from the oil and thus provides a highly profitable raw material for gasoline recovery.

When a gasoline recovery plant is included as one phase of the recovery process, the value of the gasoline secured may more than repay the cost of gas compression; and if all or a part of the gas compression costs can be assessed against the expense of gasoline recovery, the unit cost of gas lifting oil from the wells will be much reduced. The combined process may thus operate at an apparent profit for a much smaller daily recovery than would be profitable for a gas lift plant operating alone.

If saline water is produced in association with the oil, on contact with air it frequently becomes highly corrosive, attacking the tubing, well casings and surface connections and appliances. The presence of certain sulphur compounds in the gas, in the presence of air and water, may also result in serious corrosion. For these reasons, most operators prefer to use natural gas as a circulating medium if it is available. When gas is costly, however, and particularly if formation and leakage losses are excessive, air may be more economical. Of course, when natural gas is not available in sufficient quantity, there is no alternative but to use air.

**General Action of the Applied Lift**

In lifting oil from wells by the gas lift method, they are customarily tubed in such a way that the oil may flow to the surface either through the tubing or through the annular space between the tubing and the well casing. Flow is induced or assisted by forcing compressed air or natural gas into the well under appropriate pressure and in sufficient volume, either down through the tubing or through the space between the flow tubing and the well casing, depending upon the path determined upon for the rising oil. The gas so introduced, becomes occluded or entrained in the oil, lightens or "aerates" the oil column, and by its effort to expand carries the oil with it to the surface.

We can perhaps, best study the action of the gas lift by reference to a sketch. In Figure 2-A illustrates a well lined with casing, C, and equipped with an eduction tube, T. Let us assume that during a period in which no oil is removed from the well, oil rises to an equilibrium positon, the surface standing at an elevation, S, above the lower end of the eduction tube. Now, if compressed air or natural gas is forced down into the well between the casing and tubing, and the latter is left open at top and bottom, the oil level rises within the tubing T, to such extent as the resistance of the formation to back flow

will bear, as the oil surface in the annular space between C and T is depressed. In Figure 2-B illustrates the relative positions of the oil surfaces within and outside of the tubing, when the gas pressure applied is sufficient to depress the oil surface in the casing to the level of the lower end of the tubing.

At this point, the high pressure gas or air is able to escape into the lower end of the eduction tube and move upward toward the surface. In doing so, it becomes occluded or disseminated in the form of small bubbles through the oil previously forced upward into the tubing. The viscous condition of the oil and the limited cross section of the tubing prevents rapid translation or "slippage" of the gas through the oil. As long as this gas, which thus enters the tubing, is retained within the oil in occluded form, its volume serves to further elevate the surface of the oil in the tubing; furthermore, as it rises through the tubing to regions of lower pressure, it expands and its volume is greatly increased. If the volume of the expanded gas, added to that of the oil in the tubing is sufficient, the oil-gas column will be extended upward until it overflows at the surface and thus flow is established.

**Pressure Conditions Within the Well**[2]

Let us now examine the pressure conditions existing within the well at the level of the oil sand. Before gas pressure was applied to the well, the effective back pressure on the oil sand opposing the admission of oil, is equivalent to the static fluid pressure of the oil. This we have assumed to be a pressure exactly equal to the "rock pressure" within the oil sand, and there is therefore no tendency for additional oil to enter the well. When, after the gas pressure has been applied and the condition illustrated in Figure 2 has been attained, the pressure on the productive sand will have been increased to an amount determined by the new height reached by the level of the oil surface in the tubing.

As gas enters the tubing and aerates the oil, there will be additional but comparatively slight increase in pressure developed on the oil sand, until the oil overflows at the surface. The pressure developed during this stage, however, is no longer proportional to the height of the oil column, for the latter has acquired a lower density by reason of its occluded gas. Up to this point, there has been a continual increase in pressure on the productive sand, which prohibits the admission of additional oil to the well. As soon as oil begins to overflow at the surface, however, the pressure opposing admission of oil to the well begins to diminish.

Oil may continue to overflow at the surface only as a result of further "aeration" of the oil in the tubing, occluded gas displacing oil, while the density of the oil-gas mixture in the tubing becomes lower and lower and the pressure on the productive sand less and less until eventually, if the conditions illustrated are favorable, the pressure on the productive sand becomes less than the original static pressure established under the starting conditions illustrated in Figure 2-A. Under the influence of this reduced pressure, oil now begins to enter the well; and as the pressure is further diminished due to more complete aeration of the rising fluid in the eduction tube, the quantity of oil flowing in from the reservoir sand will increase until an equilibrium pressure condition is established.

We may alter this equilibrium condition by circulating a greater volume of compressed gas, the density of the flowing oil-gas column in the eduction tube and the pressure on the sand decreasing as the volume of gas circulated increases. This is limited again, however, by the flow resistance offered by the eduction tube, the resistance increasing as the flow velocity increases. It follows that, for a given size of eduction tube, there is a certain maximum volume of fluid (gas plus oil) that may be handled, beyond which the flow resistance adds pressure on the productive sand more rapidly than pressure is diminished by further increase in gas volume. These opposing factors thus determine the maximum effective gas volume that may be used under given conditions. It is apparent that the gas lift operation must impose some back pressure on the producing formation and will therefore be objectionable where the formation pressure is too low. For successful results, the back pressure developed must always be less than the formation pressure, otherwise oil cannot flow from the reservoir sand into the well.

**Operation of the Lift—Submergence**

In the initial procedure in starting the lift a pressure is encountered due to the "static submergence," which pressure is rapidly decreased, as has been discussed, until a point is reached which is termed the "working," "running," or "pumping" submergence. This latter "submergence" is the measure of the combined forces acting downward at the foot of the eductor, and is equivalent to a column of oil of sufficient height to balance said forces. It is expressed in feet of oil of given gravity.

**Operating Pressure**

The operating pressure, taken at the foot of the eductor. is directly proportional to the degree of pumping "submergence" and is expressed in pounds per square inch. The over all operating pressure, as indicated at the well head, takes into account the frictional pressure incurred in delivering the gas to the foot of the eductor in the well. Thus:

Operating pressure = feet of submergence × .434 × specific gravity of fluid.

Overall operating pressure = operating pressure plus delivery friction.

Position of lower end of eductor with regard to production differential pressure.—It has been shown that the total pressure on the sand must be less than the rock pressure to a degree that will permit maximum influx of oil into the well. The position of the lower end of the eductor, in a large way, affects this differential pressure.

Considered alone, its depth below the fluid level would exercise direct control of the differential. Thus, if the eductor were placed in a body of fluid to a depth equal to an outside hydraulic head of 100 pounds, and the force necessary to balance the frothed column were 25 pounds, the driving force would amount to 100—25=75 pounds. If the eductor was lowered to a similar head of 200 pounds, and the force supporting the resulting frothed column was assumed to be 50 pounds, the driving force would be increased to 200—50=150 pounds.

However, as the depth below the fluid level is increased, the length of the eductor is increased; and to offset increased slippage, the velocity of flow needs to be increased; and thus the frictional resistance offered to the flow through the eductor rapidly increases and the force necessary to balance this factor swiftly mounts. Hence the sum of the forces may be so great at some depth as to leave little differential with consequent influx of oil much below the maximum.

The size of the eductor, or the flow area thereof, is a factor in the control of the force supporting the frictional resistance. It is evident that for a given flow, the velocity will depend upon the flow area, other conditions being equal; therefore to a degree frictional resistance can be lessened by an increase in flow area.

Back pressure as applied to the pressure within the eductor at the discharge may mean any pressure above atmospheric. Any pressure held at this point must be added to the pressure acting downward at the foot of the eductor, and hence further cuts down the differential pressure in the flow column. It also lessens the volume of working gas within the eductor, as measured at the top of the flow column and hence lowers the mechanical efficiency if no use is made of the energy thus contained in the discharged gas. (Under some conditions back pressure of this nature is necessary to the most efficient operation.)

[2]Lester C. Uren, Nat. Pet. News.

# SIX COMPLETIONS AT MUSKEGON; MOUNT PLEASANT FIELD EXTENDED

By Special Correspondent

MUSKEGON, Mich., Apr. 13.—Six new completions with an aggregate flow of more than 6,000 bbls. were completed in the Muskegon Field during the week. There were no new dry holes completed but one well first reported as a 25-bbl. pumper was plugged and abandoned. Four of the new producers are located in Laketon Township and two in Muskegon Township.

All of the Laketon Township wells came in as Dundee producers, while one of the Muskegon Township producers is an upper Traverse pumper and the other a Dundee gusher.

Two of the largest new producers were completed by the Dixie Oil Co. The Dixie Co.'s No. 3 Kate McLaughlin, NW SW Section 12-10-17, made 85 bbls. an hour or an estimated initial of more than 2,000 bbls. at 2,050 to 2,056 feet. The same company's No. 1 J. D. Ross, NE SW Section 12-10-17, made 60 bbls. an hour and was estimated good for 1,200 bbls. initial at 2,049 to 2,054 feet.

The Puritan Oil Co. and the Majestic Development Co. brought in their first well, No. 1 John DeGroot which topped the Dundee at 2,033 feet and flowed at the initial rate of 1,800 bbls. a day with the bottom of the hole at 2,036 feet. It is in NE SE Section 12-10-17.

Nelson & Witt, Inc., brought in their sixth successive Dundee producer on the Ralph Andree lease, NW SE Section 12-10-17, striking the pay at 2,055 to 2,058 feet. It flowed at the rate of 40 bbls. an hour initial.

The largest of the two new producers in Muskegon Township was the Swastika Oil & Gas Co.'s No. 2 Giles, SE SE Section 6-10-16, which came in at 2,041 to 2,044 feet and flowed 360 bbls. in the first 24 hours.

Traverse Oil Co. got a second upper Traverse pumper in the No. 1 John C. Smith, SW NW Section 5-10-16, north of any other production in Muskegon Township. It was shot from 1,690 to 1,707 feet and made 100 bbls. initial.

Sun Oil Co. pulled the casing, plugged and abandoned No. 1 Charles Young, SE SE Section 10-10-17, Laketon Township, as a duster in the Dundee. It swabbed about 25 bbls. the first day after the shot but proved to be unprofitable. It sets the southwest limit for Laketon Township.

Seven permits for new locations were taken out in Laketon Township, none in Muskegon Township.

**Muskegon County Wildcats**

Two Muskegon County wildcat wells are drilling at more than 2,100 feet on their way to the Dundee formation after being dry in the Traverse, Fink Development Co.'s No. 1 Nash, SW NW Section 20-9-14, Ravenna Township, and Eureka Oil Co.'s No. 1 Featherstone, SW SW Section 35-11-16, Dalton Township.

Four other wildcats are shut down, another is moving in a new machine to resume drilling at about 1,000 feet and still another has just penetrated the Berea in which a show of oil was reported, the White River Oil Corp.'s No. 1 Daniel MacDonald, NE NW Section 29-12-17, Montague Township. A rig is moved in and now being erected for the Hervey-Bolema Syndicate's No. 1 F. A. Gritzen, SW NE Section 17-11-15, Cedar Creek Township.

**Western Michigan Wildcats**

Discovery of salt water instead of oil and gas in the Muskegon Oil Corp. and others' No. 1 Jerry Zarvel, W SW Section 8-14-17, Shelby Township, Oceana County, in the upper Traverse was the outstanding new development among western Michigan wildcat wells in the four counties immediately surrounding Muskegon County. The Traverse formation was topped at 1,860 feet and water was encountered at 1,890 feet. The well is shut down temporarily.

The Pennsylvania Oil & Gas Co.'s No. 1 Bert Snow, NW SE Section 23-15-15, Leavitt Township, Oceana County, is nearing the Dundee at 2,480 feet. It was dry in the upper Traverse.

The Muskegon Oil Corp. and others have completed one structure test at about 500 feet on the Mildred Shaw property, SW NE Section 27-14-16, Ferry Township, and are drilling two more. A fourth will be started immediately.

Three other Oceana County wildcats are drilling or driving pipe at less than 500 feet.

**Newaygo County**

The Lima Oil Corp.'s No. 1 Atwood, SE SW Section 6-11-13, Ashland Township, Newaygo County, is shut down again at 2,675 feet after being dry in the Dundee, topped at 2,496 feet.

Three other Newaygo County wildcats in Brooks and Sherman Townships are driving pipe or drilling at less than 800 feet and two rigs are being moved in for new deep tests in Bridgeton and Brooks Townships.

**Mecosta County**

Drillers of the Benedum-Trees Oil Co.'s No. 1 Frank Truman, SW SW, Section 26-14-8, Morton Township, Mecosta County, expect to reach the upper Traverse within a short time as it is now about 3,000 feet deep.

A second location in Mecosta County has been announced by the Big Rapids Oil & Gas Co. on the property of H. Anderson, NE NE, Section 14-15-9, Colfax Township. The Benedum-Trees well is 5 miles southwest of Mecosta and about the same distance due east of Big Rapids.

**Allegan County**

The first deep test well in Allegan County where about 140,000 acres are under lease will be started near Saugatuck by the East Shore Oil Co.

**Mount Pleasant Field**

The rapidly developing Mount Pleasant, Mich., Field was extended about three-quarters of a mile northwest of previous production when the Leonard Oil & Gas Co.'s No. 8 Keeler, SE NE, Section 11-14n-3w, Chippewa Township, Isabella County, came in with an initial production estimated at 325 bbls. in 15 hours.

The new well is half a mile west of the Chippewa Oil Co.'s No. 1 Jocelyn, SE SW, Section 12-14-3, and about the same distance north throwing the best production in the field toward Mount Pleasant and into the independently held acreage in Isabella County. The Dundee formation was topped at 3,528 feet and the pay sands were encountered at 3,563 feet.

Two new locations were announced. J. F. Markle and others' No. 1 John McNeal, NE SE, Section 9-14-3, about 1½ miles west of the Leonard-Keller producer and that much closer to Mount Pleasant, and the Chippewa Oil Co.'s No. 3 Jocelyn, SE SW, Section 12-14-3, northwest of No. 2 Jocelyn.

The record of the field is now seven oil wells producing about 1,500 to 2,000 bbls. a day and two dry holes, all completed in the Dundee. The Pure Oil Co. is taking the production of the field through pipe lines to Mount Pleasant.

The State has announced a sale of Indian land at public auction April 25 of the NW NE, Section 13, Chippewa Township.

**Lake County**

Operations were resumed on the Lake County wildcat being drilled for Fred J. Estes and others on the W. L. Kellogg property including 10,420 acres.

## EASON BUYS CONTROL

ENID, Okla., Apr. 15.—T. T. Eason of Enid, Okla., has acquired complete ownership and control of the Healdton Oil & Gas Co. and the Bolene Refining Co. by the purchase of the interests held by T. L. Wade, D. M. Montgomery and R. L. Montgomery of Marlow, Okla., and J. D. Montgomery of Enid. There will be no change in the management, as Mr. Eason has been in active charge as president and general manager of both organizations.

## WEST TEXAS FIELDS

(Continued from Page 40)

000 feet daily. Throughout the latter part of the week production of the well has been a little better than 2,300 bbls. daily.

**ESTIMATED DAILY AVERAGE PRODUCTION WEST TEXAS**
**Week Ended April 13**

| County— | Wells | Prod. |
|---|---|---|
| Crane County | 281 | 36,012 |
| Crockett | 45 | 2,040 |
| Ector County | 2 | 0 |
| Fisher County | 7 | 940 |
| Glasscock County | 18 | 700 |
| Howard County | 296 | 42,713 |
| Jones County | 80 | 5,190 |
| Loving County | 10 | 725 |
| Mitchell County | 142 | 2,549 |
| Pecos County | 299 | 87,989 |
| Reagan County | 241 | 18,673 |
| Runnels County | 3 | 100 |
| Scurry County | 5 | 30 |
| Upton County | 268 | 13,136 |
| Ward County | 3 | 183 |
| Winkler County | 577 | 143,097 |
| Total this week | 2,277 | 354,077 |
| Total last week | 2,267 | 376,122 |
| Difference | 10 | 22,045 |

### WEST TEXAS COMPLETIONS

#### Crane County

Gulf Production Co.'s No. 6 Waddell, located 660 feet from north and 1,980 feet from east line of Section 12, Block B-25, topped the salt at 1,285 feet, topped the lime at 3,206 feet, topped the pay at 3,007 feet, was drilled to a total depth of 3,480 feet, plugged back to 3,370 feet and had an initial production of 60 bbls.

#### Crockett County

Tidal Oil Co.'s No. 1 Weatherby, located 330 feet from east, C NWL, Section 30, Block 31, was dry and abandoned at 1,960 feet.

#### Fisher County

Raney Oil Co.'s No. 1 Mayberry, located 2,310 feet from south and west of Section 56, topped the lime at 3,255 feet, had an oil show at 3,288 feet and was dry and abandoned at 3,507 feet.

#### Glasscock County

Gibson & Johnson's No. 1 Mann, located in Section 6, Block 33, Township 5s, was dry and abandoned at 3,650 feet. McCreath & Suggett's No. 1 Underwood, located in Section 24, Block 36, location was abandoned.

#### Howard County

Group One-Marland's No. 1 Overton, located in Section 5, Block 32, Township 2s, T.&P.R.R. Survey, topped the pay at 2,270 feet, was drilled to a total depth of 2,337 feet and had an initial production of 120 bbls. in 12 hours. Magnolia Petroleum Co.'s No. 18 Roberts, located 405 feet from south and 330 feet from west of Section 136, Block 29, topped the pay at 2,490 feet, was drilled to a total depth of 2,570 feet and had an initial production of 80 bbls. Marland Oil Co.'s No. 4 Chalk-C, located 330 feet from north and 990 feet from east of Section 140, Block 29, had an initial production of 176 bbls. at 1,725-70 feet. Midwest Oil Co.'s No. 3 Chalk-C, located 330 feet from south and 990 feet from east line of Section 138, Block 29, had an initial production of 180 bbls. at 1,774-1,804 feet.

#### Menard County

J. P. Holstein's No. 1 Davis, located 330 feet from south and east of Section 31, location was abandoned. Carpenter & Robinson's No. 1 Kathman, located Section 2,169, was dry and abandoned at 600 feet. Sabins & Bevans' No. 2 Wilhelm, located center of south line of Section 25, was dry and abandoned at 850 feet.

#### Pecos County

Grayburg Oil Co.'s No. 1 University, located 990 feet from north and 330 feet from east of Section 2, Block 17, was dry and abandoned at 1,950 feet. Trees Oil Co.'s No. 1 Corder, located 1,017 feet from south and 2,352 feet from west of Section 44, Block 2, was dry and abandoned at 3,715 feet. Southern Crude Oil Purchasing Co.'s No. 1 Scharbaur, located 330 feet from south and west of Section 21, Block 134, was dry and abandoned at 4,232 feet.

#### Winkler County

Gulf Production Co.'s No. 4 Cowden, located 495 feet south and 1,650 feet west of Section 3, Block B-12, topped the lime at 2,524 feet, topped the pay at 2,752 feet, had an initial production of 250 bbls. daily and was drilled to a total depth of 2,969 feet. Shell-Llano Oil Co.'s No. 4 Scarborough, located 2,310 feet south and 1,650 feet east of Section 1, Block C-22, had an initial production of 85 bbls. at 3,082-3,315 feet.

#### Loving County

Lockhart & Co.'s No. 1 fee, located in Section 91, Block 1, had an initial production of 256 bbls. hourly at 4,192-4,242 feet.

#### Reagan County

California Co.'s No. 5 University, located in Section 16, Block 7, was dry and abandoned at 3,272 feet.

**PECOS COUNTY**
**Yates Pool**
**Week Ending April 9**

| Company, lease— | Wells | Prod. |
|---|---|---|
| California: | | |
| Yates—Lease 1 | 18 | 6,802 |
| Smith—Lease 1, Sec. 27 | 3 | 424 |
| Smith—Lease 1, Sec. 23 | 6 | 1,456 |
| Smith—Lease 1, Sec. 21 | 3 | 944 |
| Smith—Lease 2 | 2 | 173 |
| Smith—Lease 3 | 12 | 2,097 |
| Tippett—Lease 1 | 1 | 38 |
| Cosby Drilling Co.: | | |
| Smith | 1 | 0 |
| Gulf Prod. Co.: | | |
| All leases | 34 | 11,607 |
| Humble O. & R. Co.: | | |
| Smith | 10 | 1,467 |
| Smith-B | 5 | 791 |
| Kirby Pet. Co.: | | |
| Tippett | 2 | 60 |
| Kirby & Edson: | | |
| Tippett | 1 | 200 |
| Marland Oil Co.: | | |
| Yates-A | 7 | 261 |
| Yates-A-S | 3 | 781 |
| Matador Oil Co.: | | |
| Smith | 2 | 58 |
| Mazda & Savoy: | | |
| Smith | 3 | 614 |
| McCarty Oil Co.: | | |
| Gray | 1 | 0 |
| McMan O. & G. Co.: | | |
| Smith-A | 1 | 558 |
| Smith-B | 4 | 949 |
| Smith-C | 4 | 763 |
| Tippett | 2 | 278 |
| Richardson | 1 | 68 |
| McMan & Marland: | | |
| Yates | 17 | 4,658 |
| Mid-Kansas & Transcontinental: | | |
| Yates-A | 24 | 11,942 |
| Yates-B | 27 | 6,169 |
| Yates-C | 11 | 5,936 |
| Yates-D | 6 | 6,479 |
| Yates-E | 1 | 85 |
| Yates-F | 4 | 641 |
| Yates-G | 4 | 1,007 |
| Yates-H | 8 | 5,032 |
| Smith | 3 | 1,375 |
| Smith | 18 | 2,999 |
| Yates-C-S | 1 | 125 |
| Grayburg Oil Co.: | | |
| Pecos River Bed | 7 | 750 |
| Pecos Valley Oil Co.: | | |
| Fee, Sec. 22, Blk. 26 | 2 | 89 |
| Phillips Pet. Co.: | | |
| Monroe | 1 | 64 |
| Ramsey | 1 | 49 |
| Red Bank Oil Co.: | | |
| Smith | 5 | 509 |
| Shell Pet. Co.: | | |
| Tippett | 11 | 2,200 |
| Smith | 9 | 960 |
| Smith-B | 1 | 835 |
| Smith-D | 3 | 534 |
| Smith-E | 1 | 25 |
| Simms Oil Co.: | | |
| Smith | 7 | 5,016 |
| Skelly Oil Co.: | | |
| Tippett | 1 | 95 |
| Grand Total Yates Field | 299 | 87,903 |

**WINKLER COUNTY**
**Hendricks Pool**

| | | |
|---|---|---|
| Amerada Pet Corp.: | | |
| Cowden, 3, B-12 | 3 | 994 |
| Atlantic O. P. Co.: | | |
| Hendricks-A, 34, B-5 | 8 | 1,297 |
| Hendricks-B, 44, 26 | 4 | 797 |
| Hendricks-D, 29, B-5 | 8 | 2,375 |
| Hendricks-E, 41, B-5 | 6 | 2,975 |
| Hendricks-G, 46, 26 | 7 | 904 |
| Hendricks-H, 30, B-5 | 1 | 33 |
| Atlantic & Collett: | | |
| Hendricks-F, 40, 26 | 13 | 1,233 |
| Bankers Prod. Co.: | | |
| Hendricks, 30, B-5 | 1 | 61 |
| California Co.: | | |
| Hendricks, 29, B-5 | 8 | 1,195 |
| Cranfill & Reynolds: | | |
| Hendricks-A, 28, B-5 | 2 | 199 |
| Hendricks-B, 35, B-5 | 1 | 114 |
| Hendricks-C, 33, 26 | 2 | 163 |
| Hendricks-E, 33, 26 | 2 | 485 |
| Cranfill & Texon: | | |
| Hutchings, 47, 26 | 1 | 90 |
| Culbertson Bros: | | |
| Hendricks, 40, B-5 | 1 | 83 |
| Eastland Oil Co.: | | |
| Hendricks, 35, B-5 | 2 | 526 |
| Hendricks-B, 35, B-5 | 1 | 231 |
| Gulf Prod. Co.: | | |
| Hendricks-A, 34, B-5 | 13 | 4,576 |
| Hendricks-B, 45, 26 | 11 | 9,599 |
| Hendricks-C, 40, B-5 | 6 | 2,473 |
| Hendricks, 44, 26 | 2 | 767 |
| Cowden, 3, B-12 | 3 | 1,787 |
| Humble O. & R. Co.: | | |
| Hendricks-A, 34, B-5 | 17 | 5,615 |
| Hendricks-B, 29, B-5 | 6 | 1,147 |
| Hendricks-C, 32, 26 | 8 | 818 |
| Hendricks-B, 47, 26 | 7 | 1,143 |
| Hendricks-C, 10, B-12 | 8 | 3,510 |
| Independent O. & G. Co.: | | |
| Hendricks-A, 34, B-5 | 8 | 1,281 |
| Howe-B, 44, 26 | 3 | 429 |
| McCabe, 36, B-5 | 2 | 327 |
| Hendricks, 42, B-5 | 1 | 10 |
| Vardeman-B, 41, B-5 | 6 | 864 |
| Magnolia Pet. Co.: | | |
| Hendricks, 29, B-5 | 8 | 723 |
| Marland Oil Co.: | | |
| Hendricks, 33, 26 | 4 | 1,050 |
| Hendricks-A, 29, 26 | 2 | 202 |
| Hendricks-B, 34, 26 | 2 | 282 |
| May Prod. Co.: | | |
| Hendricks, 34, 26 | 1 | 28 |
| American Maracaibo: | | |
| Hendricks-A, 28, B-5 | 1 | 51 |
| Hendricks-B, 28, B-5 | 1 | 197 |
| Mining & Eng. Co.: | | |
| Hendricks, 10, B-22 | 1 | 35 |
| Murchison & Cranfill: | | |
| Hendricks-A, 35, B-5 | 3 | 1,393 |
| Hendricks-B, 35, B-5 | 3 | 1,453 |
| Hendricks-C, 35, B-5 | 1 | 32 |
| Hendricks-H, 33, 26 | 1 | 1,806 |
| Hendricks-I, 47, 26 | 2 | 546 |
| Prairie O. & G. Co.: | | |
| Hendricks, 40, 26 | 6 | 1,631 |
| Cowden, 3, B-12 | 6 | 4,836 |
| Pure Oil Co.: | | |
| Hendricks-A, 41, B-5 | 11 | 2,091 |
| Hendricks-B, 34, B-5 | 13 | 4,682 |
| Hendricks-C, 45, 26 | 14 | 9,159 |
| Hendricks-D, 44, 26 | 1 | 356 |
| Republic Prod. Co.: | | |
| Hendricks, 45, 26 | 12 | 2,310 |
| Hendricks-B, 41, B-5 | 5 | 325 |
| Shell Pet. Co.: | | |
| Hendricks-A, 45, 26 | 6 | 1,653 |
| Hendricks-B, 29, B-5 | 5 | 1,212 |
| Hendricks-C, 29, B-5 | 8 | 1,665 |
| Hendricks-D, 41, B-5 | 6 | 668 |
| Hendricks-E, 49, B-5 | 4 | 543 |
| Hendricks-F, 46, 26 | 8 | 2,234 |
| Hendricks-G, 39, 26 | 1 | 45 |
| Shell-Texas Co.: | | |
| Cowden-A, 3, B-12 | 6 | 1,462 |
| Hendricks, 45, 26 | 6 | 1,808 |
| Hendricks-A, 29, B-5 | 11 | 3,535 |
| Hendricks-B, 40, 26 | 6 | 787 |
| Hendricks-C, 40, 26 | 6 | 2,410 |
| Hendricks-D, 40, 26 | 6 | 668 |
| Hendricks-E, 39, 26 | 4 | 543 |
| Skelly Oil Co.: | | |
| Hendricks, 40, 26 | 12 | 8,091 |
| Hendricks-B, 39, 26 | 2 | 37 |
| Hendricks-C, 39, 26 | 1 | 608 |
| Southern C. O. P. Co.: | | |
| T-67 Hendricks-A, 42, B-5 | 3 | 243 |
| T-67 Hendricks-3-A, 4, B-12 | 4 | 431 |
| T-67 Hendricks-B, 44, 26 | 5 | 729 |
| T-67 Hendricks-3-B, 33, 26 | 5 | 420 |
| T-67 Hendricks-C, 33, B-5 | 5 | 852 |
| T-67 Hendricks-2-D, 28, 26 | 4 | 795 |
| T-67 Hendricks-E, 42, B-5 | 4 | 152 |
| T-67 Hendricks-F, 33, B-5 | 4 | 843 |
| T-68 Hendricks-3-A, 35, B-5 | 3 | 169 |
| T-68 Hendricks-B, 46, 26 | 2 | 200 |
| T-88 Hendricks-A, 44, 26 | 6 | 928 |
| T-88 Hendricks-B, 4, B-12 | 4 | 1,175 |
| T-88 Hendricks-C, 29, B-5 | 7 | 952 |
| T-88 Hendricks-D, 4, B-12 | 6 | 3,831 |
| T-88 Hendricks-H, 28, B-5 | 6 | 1,345 |
| T-88 Hendricks-I, 30, B-5 | 7 | 2,038 |
| T-88 Hendricks-J, 30, B-5 | 5 | 1,512 |
| T-88 Hendricks-K, 41, 26 | 5 | 1,398 |
| T-88 Hendricks-L, 4, B-12 | 4 | 955 |
| T-88 Hendricks-M, 33, 26 | 30 | 13,662 |
| T-88 Hendricks-N, 28, 26 | 5 | 1,210 |
| T-88 Hendricks-O, 28, 26 | 2 | 380 |
| T-88 Hendricks-P, 28, 26 | 1 | 217 |
| T-88 Hendricks-Q, 27, 26 | 2 | 869 |
| T-88 Hendricks-R, 27, 26 | 2 | 1,106 |
| T-88 Hendricks-S, 34, 26 | 4 | 1,251 |
| T-88 Hendricks-T, 34, 26 | 7 | 832 |
| T-88 Hendricks-U, 41, 26 | 7 | 1,395 |
| T-88 Hendricks-V, 29, 26 | 1 | 99 |
| T-88 Hendricks-W, 5, B-12 | 1 | 386 |
| T-88 Hendricks-CX, 21, 26 | 1 | 210 |
| T-89 Hendricks-A, 35, B-5 | 3 | 189 |
| T-89 Hendricks-B, 35, B-5 | 2 | 457 |
| T-89 Hendricks-C, 35, B-5 | 3 | 846 |
| T-89 Hendricks-D, 35, B-5 | 1 | 305 |
| T-89 Hendricks-E, 40, B-5 | 2 | 269 |
| T-89 Hendricks-F, 40, B-5 | 2 | 313 |
| T-89 Hendricks-H, 46, 26 | 1 | 53 |
| T-89 Hendricks-I, 10, B-12 | 2 | 731 |
| T-89 Hendricks-J, 9, B-12 | 3 | 1,841 |
| T-90 Hutchings, 47, 26 | 1 | 54 |
| Texon O. & L. Co.: | | |
| Hendricks-A, 41, B-5 | 6 | 720 |
| Hendricks-B, 45, B-5 | 6 | 1,297 |
| Winkler O. P. Co.: | | |
| Hendricks, 33, 26 | 1 | 72 |
| Grand Total Hendricks Pool | 553 | 156,990 |

**Leck Pool**

| | | |
|---|---|---|
| Atlantic-Kesslar & Logan: | | |
| Leck, 3, 74 | 2 | 533 |
| Amerada Pet. Corp.: | | |
| Leck, 3, 74 | 2 | 677 |
| Empire G. & F. Co.: | | |
| Daugherty, 3, 74 | 3 | 695 |
| Magnolia Pet. Corp.: | | |
| Scarborough, 1, C-22 | 1 | 198 |
| Gulf Prod. Co.: | | |
| Scarborough, 1, C-22 | 1 | 70 |
| Shell & Llano Oil Co.: | | |
| Scarborough, 1, C-22 | 3 | 145 |
| Shell & Danciger: | | |
| Leck, 3, 74 | 2 | 311 |
| Skelly Oil Co.: | | |
| Leck, 3, 74 | 1 | 272 |
| Prairie O. & G. Co.: | | |
| Daugherty, 3, 74 | 1 | 438 |
| Warner-Quinlan: | | |
| Leck, 3, 74 | 1 | 467 |
| Total Leck Pool | 17 | 3,806 |

**O'Brien Pool**

| | | |
|---|---|---|
| Marland Oil Co.: | | |
| Morton, 10, B-12 | 2 | 339 |
| Wentz Oil Corp.: | | |
| Morton, 10, B-12 | 1 | 224 |
| Simms Oil Co.: | | |
| Sealy, 50, F | 1 | 49 |
| Richardson et al: | | |
| Stockton, 50, F | 1 | 171 |
| Total O'Brien Pool | 5 | 783 |
| Grand Total Winkler County | 575 | 161,579 |

## AMERICAN OIL BURNER INSTITUTE REORGANIZED

(Continued from Page 32)

dent of the American Petroleum Institute, called for more earnest association work, because of a community of interests of apparent competitors.

#### Automobiles as Examples

Alfred Reeves, general manager of the National Automobile Chamber of Commerce, advanced appeal for the oil burner industry to profit by the experience of the automotive industry. "Today there is a battle on—a battle of beauty," he said. "The cellar must be beautiful as well as the rest of the house. Marketing today is an appeal to the women of the household and women demand beauty in household equipment." Mr. Reeves traced the development of his organization, declaring that it had started as a defensive group and ended by becoming a great productive force. The high price of the early automobile was forced down because of the fine spirit of co-operation shown by the manufacturers and the tremendous production of the present day resulted, he said. Dealer organizations have been found to be of great benefit in making the members better merchandisers and in teaching them that the generous selling of all makes of equipment always reacted to increase the sales of each element.

Of particular interest to the oil burner industry, Mr. Reeves said, was the experience of the automobile manufacturers in the formation of operation of cross-licensing committees. Every manufacturer turns into this pool his individual patents and receives licenses to all other patents. The results have been so satisfactory that, in the 14 years it has been in existence, not a lawsuit has been filed. Mr. Reeves offered the co-operation of the legal advisers of his association in detailing to an American Oil Burner Association committee the benefits of its experience. In the automotive field, he said, manufacturers exchange production figures each month; rival manufacturers are invited to visit plants, and all operations are open to inspection.

"The most important thing in any business," said Mr. Reeves, "is a healthy market. Watch and do everything possible to broaden your market and have your product well thought of by the public. The heartiest co-operation on the part of everyone of you will result in a greatly increased aggregate business and each manufacturer will get that share of business to which the merit of his product and his enterprise is entitled."

George Oxley, director of public relations, National Electric Light Association, spoke of the great interest which his association has shown in the oil burner industry, because of the aggregate load resulting from the operation of burner motors. He outlined the results of the recent oil burner survey conducted by his organization.

#### More Research Needed

Thornton Lewis, president of the American Society of Heating and Ventilating Engineers, spoke on the need for more adequate research in the development of the oil burning industry. "The more research we do in any line," he said, "the more we see the increased need for it." He pointed out the highly specialized markets now available for oil heat, mentioning the garage industry as one that should be given particular attention by oil burner manufacturers. He urged the association to carry out a research program based on the establishment of fundamentals, and cited the great developments in the heating industry that have resulted from the research work of the American Society of Heating and Ventilating Engineers. Standards for equipment should be raised, not lowered, he said, and the study of fundamentals encouraged in order that oil heat maintain its leadership in the domestic heating field.

A. R. Small, vice president, Underwriters' Laboratories, traced the present position of the laboratories in relation to the oil burner industry and discussed the subjects on which the laboratories and the burner industry are not in accord.

His talk brought up an interesting discussion.

The closing session was dedicated to sales talks and reorganization of the Oil Heating Institute, Inc.

A total of 250 delegates attended the sales session. M. E. Simpson of the Electrol Distributing Corp., New York, outlined the field of automatic heat, including consideration of gas and electricity as well as oil. After weighing all the angles, he predicted a record of sales in 1929. Much of the advance he attributed to the co-operation and endorsement of oil heat by the American Petroleum Institute and the National Electric Light Association. Concluding his talk, Mr. Simpson said that as of April 1, this year, his company had about four times as many orders on its dealers' books as at the corresponding time last year.

T. C. Kyle, sales manager for the Winslow Boiler & Engineering Co., spoke on "Retail Sales." He stressed the necessity of keeping the sales appeal of the industry ever abreast of the changing attitude of the buying public, and drew comparisons between the old methods used to sell oil heating equipment and the vastly different appeal that must be used today. Where the salesman of five years ago was selling the mechanical features of oil burners, he said, the successful oil burner salesman of today is offering his prospects health and comfort insurance. "Pushing doorbells and talking to prospects and near-prospects is the surest way to get a true picture of the public's frame of mind and its attitude toward automatic oil heating," said Mr. Kyle. "It is good for the salesman's soul to do door-to-door canvassing." He further advocated hard and continuous work as the best tonic for sales volume.

**Advice on Sales**

E. V. Walsh, sales manager for the Timken-Detroit Co., speaking on "The Value of Analysis," traced from the time when an individual analyzes himself and decides to handle oil burners, to the most minute analysis of his going business. Mr. Walsh opened the records of his company to the meeting by way of illustrating the great value analysis has been to the firm. Figures from the Oil Heating Institute survey were quoted to show, in connection with the compilation of figures from salesman's reports, how the company was covering the market, and the real value of the effort expended to cultivate different markets. He showed, also from an analysis of salesmen's reports that seasonal variations in the business of the Timken-Detroit Co. had been partly due to decreased efforts in supposedly dull periods.

The closing feature of the sales session was an animated talk on the conversational strategy that must be used to make a consistently good sales showing. Professors Borden and Busse of New York University spent seven and one-half years gathering data on 15,000 sales interviews. The results of the work, they stated, can be condensed to six basic principles of sales presentation:

1. Don't talk too much.
2. Don't interrupt when the prospect is speaking.
3. Don't get belligerent or overpositive.
4. Always inquire for an explanation of the prospect's objections before you attack them.
5. After the prospect raises an objection, restate it in your own words to be sure you understand it, and to show him that you do; and
6. Base your concluding attack on one issue only. Others should be disposed of as they arise. These principles have been found to be lacking in some apparently intelligent salesmen. They are too obvious to receive much attention in text books on selling, but they are absolute necessities to successful salesmanship.

**Oil Specifications**

Dr. H. T. Kennedy, of the Bureau of Standards, congratulated the industry for its progressive action in standardizing oil specifications. In the discussion that followed his talk, Doctor Kennedy said that the color of oil is not of great importance, so far as slight shade difference is concerned.

Officers of the American Oil Burner Association for the next year were elected as follows: President, E. M. Fleischmann, president of the May Oil Burner Corp.; chairman of the board, E. P. Bailey, president of the National Airoil Burner Co.; vice presidents, Walter F. Tant, W. C. McTarnahan. George Bullock, I. M. Nelson and John W. Scott.

The executive committee, which was increased to seven members this year, comprises; J. C. Johnson, E. M. Fleischmann, E. P. Bailey, Trell W. Yocum, H. Finnie, Walter Tant and Lionel Jacobs.

## AIRCRAFT YEAR BOOK PRESENTS NEW FACTS

The eleventh annual edition of the Aircraft Year Book just issued by the Aeronautical Chamber of Commerce of America, New York., describes the phenomenal expansion in aviation and gives hitherto unpublished facts concerning flying in the United States.

The book contains more than 250 pages of text, 100 pages of technical drawings of planes and engines produced during 1928, 190 illustrations, airways maps of the United States and Europe and a comprehensive appendix covering the entire field of aviation.

Explaining that the trend in air transport has passed from individual experiments to corporation effort and is now undergoing transition from corporate effort to group control, the Aircraft Year Book presents facts to show that the present year must witness an even greater expansion of American aeronautics than did 1928. The 12 months of record, however, were the greatest in transportation history, judged by actual progress over the preceding year. In 1928 the air mail operators carried an average of 5 tons of mail daily and at the end of the year the average daily tonnage was more than 7 tons. Air transport lines in the United States carried five times the number of passengers in 1928 than they did in 1927.

On December 31, 1928, there were 48 airways in the United States. They had a combined length of 20,000 miles and linked together in one nationwide network of flying routes 368 cities which at the end of the year possessed municipal airports in various stages of development. "Along 19 of the main routes 7,566 of their total length of 9,135 miles had been lighted and otherwise made available for night flying."

Newspapers and magazines are credited with being the most influential agencies toward making people air-minded. More than 200 public schools in this country are teaching aeronautics and the teachers themselves are taking extra courses in the subject.

The development of air-rail service, whereby the railroads and air transport lines are co-operating to provide exceptionally fast transportation throughout the United States is explained at length. The position of aircraft stocks in the financial market is analyzed as is the reason for the merging of companies and their control under powerful financial groups. The status of airplane and engine manufacturers is explained as is the remarkable increase in the number of large industrial concerns which have established aviation divisions to purvey accessories and auxiliary equipment.

## TO OPEN MIDLAND OFFICE

The production department of the Shell Petroleum Corp. plans to establish an office at Midland, Tex., on completion of the new Petroleum Building in that city, on or about May 15, to look after its production activities in West Texas and New Mexico. C. W. Alcorn will be in charge of the Midland office. Division headquarters will remain at Dallas.

## NEW DISTRIBUTOR

CHICAGO, Apr. 13.—The Snyder Oil Co. has been organized at Fifth and South Grand Avenue, Springfield, Ill., to deal in gasoline, kerosene, oils and alcohol with a capital stock of $10,000. The members of the company are O. E. Snyder, W. R. Leonard and L. S. Manson.

## GEN. PIERCE APPOINTED W. C. TEAGLE'S ASSISTANT

By A. E. Mockler

NEW YORK, Apr. 15.—Gen. Palmer E. Pierce, associated with the Standard Oil Co. (New Jersey) since 1920, has

Gen. Palmer E. Pierce

been appointed special assistant to Walter C. Teagle, president, and has already assumed his new duties.

General Pierce's activities, it is stated, will be primarily confined to the company's operations in Latin American countries, where the New Jersey company has large and important interests. For several years past, General Pierce has been assisting Chester O. Swain, vice president in charge of the legal department of the Standard Oil Co. (New Jersey), and has devoted his attention particularly to the Mexican affairs of the company.

He will make his headquarters in New York, and will assume complete charge of the New Jersey company's public relations in Latin America.

A West Point graduate, General Pierce passed many years in the United States Army, seeing service in Porto Rico in the Spanish-American War, and was stationed also in China and the Philippines. For six years he was assistant professor of philosophy at West Point.

After serving as a member of the General Staff in Washington, General Pierce went overseas in 1918 as commander of the Fifty-fourth Infantry Brigade, and participated in several of the closing battles of the war. He was awarded the Distinguished Service Medal for "exceptionally meritorious and distinguished service" in the World War. Following his retirement from the army in 1919, General Pierce was for a time associated with the Baldwin Locomotive Works. He is president of the National Collegiate Athletic Association, and has been associated with its activities for many years. He is also an officer of the Amateur Athletic Federation.

Standard Oil Co. (New Jersey) is operating in Venezuela, Colombia, Peru, and other South American countries, directly, and through subsidiary companies.

## MICHIGAN STATE PUBLICATION

"Oil and Gas Development in Michigan" is the title of a new state publication by R. B. Newcombe, assistant state geologist, which has recently come off the press and is now ready for distribution. From a history of the earliest discoveries of oil and gas in Michigan to developments of the past few years brought about through the discovery of the Saginaw and Muskegon Fields, this new volume is a more complete record than has been available in a single publication since that compiled and published in 1912 by R. A. Smith, present state geologist.

# Unit Operation Made Legal in New Mexico In Conservation Act

The Legislature of the State of New Mexico passed the committee substitute for House Bill No. 229 relating to the conservation of oil and gas and the prevention of waste and authorizing agreements made for such purposes among oil and gas operators and royalty owners in the same pool. The bill has been approved by Governor Dillon and is now a law. A copy of the bill follows:

Section 1. Agreements made in the interest of conservation of oil and gas, or the prevention of waste, between and among operators owning separate holdings in the same oil and gas pool, or in an area that appears from geological or other data to be underlaid by a common accumulation of oil or gas, or both, or between and among such operators and royalty owners therein for the purpose of bringing about the development and operation of said pool, or area, or any part thereof, as a unit or establishing and carrying out a plan for the co-operative development and operation thereof, when such agreements are approved by the state geologist, are hereby authorized and shall not be held or construed to violate any of the statutes of this State relating to monopolies or contracts and combinations in restraint of trade.

Section 2. When such agreements as are described in Section 1 of this act relate to an oil and gas pool wherein are situated lands in which the state owns mineral or royalty interests the Commissioner of Public Lands is hereby authorized to enter into such agreements as a party thereto, on behalf of the state, when in his judgment the best interests of the state will be served thereby.

Section 3. That it is necessary for the preservation of the public peace and safety of the inhabitants of the State of New Mexico that the provisions of this act shall become effective at the earliest possible time, and, therefore, an emergency is hereby declared to exist and this act shall take effect and be in full force from and after its passage and approval.

## PIPE LINE RUNS IN MARCH

NEW YORK, Apr. 15.—March crude oil deliveries of the 11 pipe lines of the former Standard Oil group amounted to 15,517,640 bbls., an average of 500,569 bbls. daily, against 13,926,096 bbls., or 497,361 bbls. daily in the preceding month. Runs from wells by the group, exclusive of Prairie, Northern and Southern Pipe Line companies, amounted to 2,018,586 bbls. in March, an average of 65,116 bbls. daily, compared with 1,618,937 bbls., or 57,819 bbls. a day, in the previous month.

Deliveries by this group of lines in the three months ended March 31, this year, were 44,796,819 bbls., a gain of 1,214,699 bbls., or 2.7 per cent over the first quarter of 1928.

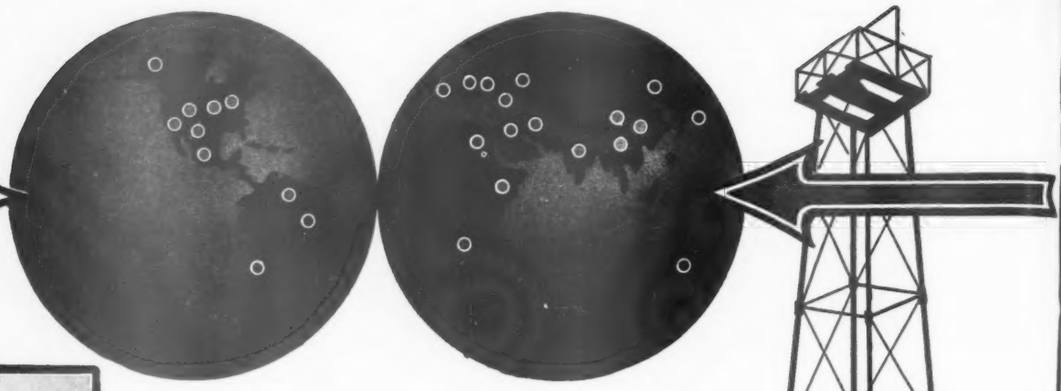
Runs from wells in the same period were 5,431,212 bbls., compared with 5,762,109 bbls. in the first quarter last year.

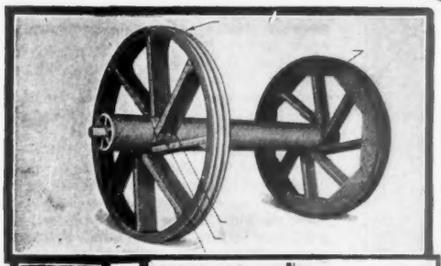
Deliveries in the first quarter this year averaged 497,742 bbls. daily, against 478,924 bbls. a day in the same months last year, while runs averaged 60,347, against 63,319 bbls.

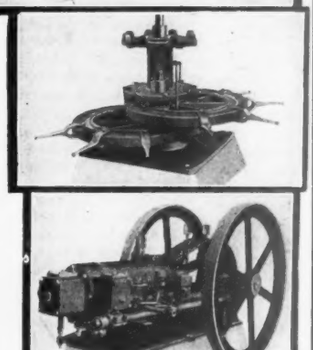
## NEW OIL AREAS IN SLOVAKIA

As the Government's oil wells at Gbely, Slovakia, have now been exhausted, experimental drilling has recently been undertaken under the Ministry of Public Works in the hope of locating new sources of oil in the vicinity of the old wells. As a result a new area has been discovered, yielding approximately 7½ metric tons of oil daily, and while this quantity is considerably less than that obtained from the old fields it is confidently expected it will be increased by further drilling in the neighborhood. At Turzovka, in the northern part of Slovakia, near the Polish frontier, recent drilling has located a new source of light mineral oil which is now being exploited.

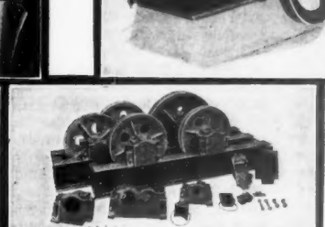
WHERE EVER there is oil THE MARION LINE of OILWELL MACHINERY gets it to the surface at less cost











# THE MARION LINE

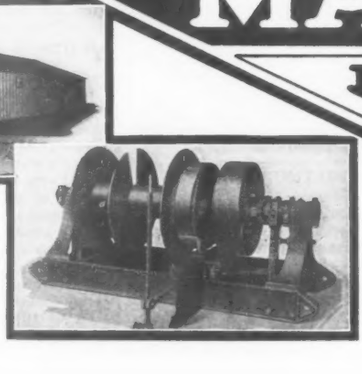
Keeping step with the exacting demands of producers, Marion engineers have produced equipment that will bring oil to the surface at a minimum cost. We have prepared a series of bulletins that tells in detail about this machinery. These are listed below and we shall be pleased to send any of them to you on request:

Bulletin No. 1—Steel and Wood Derricks, Crown Blocks, etc.
Bulletin No. 2—Steel Bull Wheels, Band Wheels, Tug Rims, etc.
Bulletin No. 3—Standard Rig Irons, Sand Wheels, etc.
Bulletin No. 4 — Gas Engines, Reversible Clutches, etc.
Bulletin No. 5—Band Wheel Powers, Geared Powers, Pumpers, Idlers, etc.
Bulletin No. 6—Marion Jacks, Sucker Rods, Pulling Machines and other Surface Equipment.
Bulletin No. 7—Marion Metal Buildings, Engine Houses, Garages, etc.
Bulletin No. 8—Belting, Packing, Wire Line, Cordage, Clean Out Machines, etc.

**Marion Machine, Foundry & Supply Co.**
**Marion, Indiana**

*Eastern District Sales Office*
P. O. Box 458, Scottdale, Pa.

THE MARION LINE



MARION MACHINE, FOUNDRY & SUPPLY CO., Marion, Indiana

Gentlemen:

We are interested in the following Bulletins which please send us:

.....
.....
.....
.....
.....

Name.....
City.....
State.....

# ADVANCE RESUMED IN AVERAGE GASOLINE TANK WAGON FOR MONTH

The gasoline tank wagon prices over the United States showed an improvement during March, according to The Oil and Gas Journal's report covering retial prices in 50 representative cities. The increase on April 1 amounted to .16 cent above the average on March 1. The increase in the average may be attributed principally to the adjustment of prices on the Pacific Coast. In the Middle West there were scattered increases and decreases in the prices, local conditions being largely responsible for the trend of the change.

There were numerous tax advances shown by April 1 which had the effect of an increase in price so far as the public is concerned but these increases did not better the revenue to the industry. On March 18 the tax was increased 1 cent in South Carolina from 5 cents to 6 cents; on March 29 the tax in New Jersey was increased from 3 cents to 4 cents; on April 1 Montana increased its tax from 3 cents to 5 cents; April 1 Nebraska increased its tax from 2 cents to 4 cents and Wyoming increased its tax from 3 cents to 4 cents. This raised the average tax in the 50 cities from 3.03 cents on March 1 to 3.19 cents on April 1.

### GASOLINE PRICES EFFECTIVE APRIL 1, 1929

**Table showing gasoline tank wagon prices as of April 1, 1929, exclusive of taxes, in 50 representative cities, including the amount and the date of changes since March 1, 1929. High and low prices and state taxes also given.**

| | Mar. 1 | Price changes Mar. | | | Prices Apr. 1 | High and Low 1928 | | 1927 | | Tax Apr. 1 1928 |
|---|---|---|---|---|---|---|---|---|---|---|
| Birmingham, Ala. | 14.0 | .... | .... | .... | 14.0 | 18.0 | 14.0 | 18.0 | 14.0 | 5.0 |
| Phoenix, Ariz. | 14.0 | .... | .... | .... | 14.0 | 18.0 | 14.0 | 19.0 | 16.0 | 4.0 |
| Little Rock, Ark. | 13.0 | 9 12.0 | .... | .... | 12.0 | 16.0 | 11.0 | 15.0 | 11.0 | 5.0 |
| San Francisco, Calif. | 12.0 | 18 16.0 | .... | .... | 16.0 | 14.0 | 14.0 | 14.0 | 9.0 | 3.0 |
| Denver, Colo. | 11.0 | .... | .... | .... | 11.0 | 16.0 | 13.0 | 18.0 | 13.0 | 3.0 |
| Hartford, Conn. | 16.0 | .... | .... | .... | 16.0 | 18.0 | 16.0 | 22.0 | 18.0 | 2.0 |
| Dover, Del. | 15.0 | .... | .... | .... | 15.0 | 18.0 | 16.0 | 19.0 | 16.0 | 3.0 |
| Jacksonville, Fla. | 17.0 | .... | .... | .... | 17.0 | 18.0 | 13.0 | 16.0 | 10.0 | 5.0 |
| Atlanta, Ga. | 17.0 | .... | .... | .... | 17.0 | 18.0 | 13.0 | 18.0 | 10.0 | 4.0 |
| Boise, Idaho | 17.5 | 20 19.5 | .... | .... | 19.5 | 20.5 | 19.5 | 22.5 | 19.5 | 4.0 |
| Peoria, Ill. | 14.2 | .... | .... | .... | 14.2 | 15.2 | 9.0 | 18.2 | 9.0 | ... |
| Chicago, Ill. | 14.0 | .... | .... | .... | 14.0 | 15.0 | 14.0 | 17.0 | 14.0 | ... |
| Indianapolis, Ind. | 14.2 | .... | .... | .... | 14.2 | 15.2 | 10.2 | 18.2 | 10.2 | 4.0 |
| Des Moines, Iowa | 14.5 | .... | .... | .... | 14.5 | 15.5 | 11.9 | 16.0 | 9.9 | 3.0 |
| Wichita, Kans. | 12.8 | .... | .... | .... | 12.8 | 13.8 | 10.8 | 15.8 | 10.8 | 2.0 |
| Louisville, Ky. | 15.0 | .... | .... | .... | 15.0 | 16.0 | 13.0 | 17.0 | 13.0 | 5.0 |
| New Orleans, La. | 11.5 | 9 10.5 | .... | .... | 10.5 | 14.5 | 10.5 | 14.5 | 11.5 | *3.0 |
| Augusta, Me. | 16.0 | .... | .... | .... | 16.0 | 18.0 | 17.0 | 22.0 | 17.0 | 4.0 |
| Baltimore, Md. | 14.0 | .... | .... | .... | 14.0 | 16.0 | 15.0 | 19.0 | 16.0 | 4.0 |
| Springfield, Mass. | 16.0 | .... | .... | .... | 16.0 | 18.0 | 16.0 | 22.0 | 12.0 | ... |
| Detroit, Mich. | 14.8 | .... | .... | .... | 14.8 | 15.8 | 11.8 | 18.8 | 11.8 | 3.0 |
| Duluth, Minn. | 15.5 | .... | .... | .... | 15.5 | 16.5 | 12.5 | 19.5 | 12.5 | 2.0 |
| Natchez, Miss. | 15.0 | .... | .... | .... | 15.0 | 16.5 | 12.5 | 15.5 | 12.5 | 5.0 |
| Kansas City, Mo. | 13.9 | .... | .... | .... | 13.9 | 14.9 | 10.9 | 17.9 | 10.9 | *3.0 |
| Helena, Mont. | 19.5 | .... | .... | .... | 19.5 | 20.5 | 19.5 | 22.0 | 19.5 | 5.0 |
| Omaha, Neb. | 14.25 | .... | .... | .... | 14.25 | 15.25 | 13.25 | 14.25 | 12.25 | 4.0 |
| Reno, Nev. | 18.0 | 19 20.0 | .... | .... | 20.0 | 18.0 | 18.0 | 18.0 | 15.0 | 4.0 |
| Newark, N. J. | 14.0 | .... | .... | .... | 14.0 | 16.0 | 15.0 | 19.0 | 16.0 | 3.0 |
| Albuquerque, N. Mex. | 17.0 | .... | .... | .... | 17.0 | 17.0 | 14.0 | 20.0 | 16.0 | 5.0 |
| New York, N. Y. | 16.0 | .... | .... | .... | 16.0 | 18.0 | 17.0 | 22.0 | 17.0 | ... |
| Charlotte, N. C. | 14.0 | .... | .... | .... | 14.0 | 17.0 | 15.0 | 19.0 | 16.0 | 4.0 |
| Fargo, N. Dak. | 16.9 | .... | .... | .... | 16.9 | 17.0 | 12.0 | 20.0 | 12.0 | 2.0 |
| Cleveland, Ohio | 14.0 | .... | .... | .... | 14.0 | 16.0 | 14.0 | 19.0 | 14.0 | 3.0 |
| Tulsa, Okla. | 14.0 | .... | .... | .... | 14.0 | 14.0 | 10.0 | 15.0 | 10.0 | 3.0 |
| Portland, Ore. | 12.5 | 19 16.5 | .... | .... | 16.5 | 14.5 | 14.5 | 14.5 | 11.0 | 3.0 |
| Philadelphia, Pa. | 15.0 | .... | .... | .... | 15.0 | 18.0 | 15.0 | 19.0 | 12.0 | †3.0 |
| Providence, R. I. | 16.0 | 26 13.0 | .... | .... | 13.0 | 19.0 | 17.0 | 22.0 | 17.0 | 2.0 |
| Charleston, S. C. | 14.0 | .... | .... | .... | 14.0 | 17.0 | 15.0 | 19.0 | 15.0 | 6.0 |
| Huron, S. Dak. | 15.3 | .... | .... | .... | 15.3 | 16.3 | 14.5 | 19.5 | 11.5 | 4.0 |
| Memphis, Tenn. | 13.0 | .... | .... | .... | 13.0 | 16.0 | 12.0 | 15.0 | 10.0 | 3.0 |
| Dallas, Tex. | 14.0 | 20 11.0 | .... | .... | 11.0 | 14.0 | 9.0 | 13.0 | 10.0 | 2.0 |
| Salt Lake City, Utah | 17.5 | .... | .... | .... | 17.5 | 18.5 | 16.5 | 20.5 | 16.5 | 3.5 |
| Burlington, Vt. | 15.0 | .... | .... | .... | 15.0 | 18.0 | 17.0 | 22.0 | 17.0 | 3.0 |
| Norfolk, Va. | 14.0 | .... | .... | .... | 14.0 | 16.0 | 14.0 | 18.0 | 16.0 | 5.0 |
| Washington, D. C. | 14.0 | .... | .... | .... | 14.0 | 16.0 | 15.0 | 19.0 | 16.0 | 2.0 |
| Charleston, W. Va. | 14.0 | .... | .... | .... | 14.0 | 17.0 | 15.0 | 18.0 | 16.0 | 4.0 |
| Milwaukee, Wis. | 14.1 | .... | .... | .... | 14.1 | 15.1 | 13.1 | 18.1 | 13.1 | 2.0 |
| Casper, Wyo. | 15.0 | .... | .... | .... | 15.0 | 16.0 | 14.0 | 18.0 | 14.0 | 4.0 |
| Seattle, Wash. | 12.5 | 19 16.5 | .... | .... | 16.5 | 14.5 | 14.5 | 14.5 | 11.0 | 2.0 |
| Minneapolis, Minn. | 15.2 | .... | .... | .... | 15.2 | 16.2 | 11.0 | 15.2 | 11.1 | 2.0 |
| Average price | 14.73 | .... | .... | .... | 14.89 | 16.54 | 13.54 | 18.15 | 13.55 | 3.19 |

*State tax 2 cents, remainder city tax. †Paid by dealer.

### AVERAGE TANK WAGON PRICE IN 50 CITIES

(Exclusive of Tax)

| | |
|---|---|
| April 1, 1927 | 16.160 |
| May 1 | 15.320 |
| June 1 | 14.720 |
| July 1 | 14.86 |
| August 1 | 14.89 |
| September 1 | 14.62 |
| October 1 | 14.39 |
| November 1 | 14.32 |
| December 1 | 14.21 |
| January 1, 1928 | 14.29 |
| February 1 | 14.33 |
| March 1 | 14.71 |
| April 1 | 14.81 |
| May 1 | 15.02 |
| June 1 | 15.22 |
| July 1 | 15.29 |
| August 1 | 15.74 |
| September 1 | 16.04 |
| October 1 | 16.34 |
| November 1 | 16.28 |
| December 1 | 15.98 |
| January 1, 1929 | 16.00 |
| February 1 | 15.11 |
| March 1 | 14.73 |
| April 1 | 14.89 |

## REQUA BELIEVES FEDERAL LEGISLATION IS ASSURED

**By Charles E. Kern**

*Washington Bureau, The Oil and Gas Journal*

WASHINGTON, D. C. Apr. 15.—State and federal legislation in the near future is looked upon as assured by Mark L. Requa of California.

Mr. Requa has been closely in touch with every action that has been taken in respect to oil conservation and he has been in frequent conference with President Hoover.

Referring to the present situation with respect to conservation today, Mr. Requa said:

"The letter of the Federal Oil Conservation Board to R. C. Holmes, chairman of the committee on conservation of the American Petroleum Institute, again emphasizes the long asserted opinion of the Government as to the necessity for conserving our oil resources. This opinion is no longer one solely of Government, but is now accepted throughout the petroleum industry, and the public is rapidly coming to realization of the truth.

"It is important that the public should become better informed as to the real facts for when fully in possession of them there is no doubt that their verdict will be for immediate conservation as the one act that will most nearly guarantee ample supplies of gasoline over the longest period of time and at the most reasonable price.

"Because of the question of states' rights involved, the federal authority has not been such as to make it possible to take the necessary steps and unaided the industry is helpless. There has not only been the possibility of contravention of the Sherman Act, but state legislation has often prohibited the proper course that was obviously in behalf of public welfare.

"We are rapidly reducing our supplies of mineral and constantly increasing our demand, and once exhausted these supplies cannot be renewed. The only course, therefore, is to promote and permit the maximum of efficiency. Much has yet to be accomplished, but the American people are coming to realize that our petroleum supplies are not unlimited, and with full realization of the importance of gasoline it seems probable that an insistent public demand for action will quickly develop that must find prompt reflection in both Congress and the State legislatures.

"That three parties at interest—the public, the Government and the industry—can well unite in a common cause for the elimination of the waste now so painfully in evidence, and that is not only injurious to all, but will in the long run jeopardize national safety and prosperity.

"My official control during the World War of the Petroleum industry then convinced me that the nation must inevitably sooner or later adopt a policy of conservation and encourage the petroleum industry in every way in making that policy effective. The public, the Government and the petroleum industry may well join hands in promoting this great constructive measure for the conservation of our petroleum resources."

## GEOLOGISTS DISCUSS CONTINENT'S FRAMEWORK

Tulsa Geological Society held a regular meeting Monday evening at the Tulsa Building, having as their guest Dr. Raymond C. Moore of the University of Kansas, who talked on "The Framework of the North American Continent." The meeting was attended by a large number of geologists.

Doctor Moore said evidence concerning the geologic framework of southeastern North America is found (1) in the distribution and relationships of Paleozoic borderlands and geosynclines, (2) in other tectonic features, (3) in the character and thickness of sedimentary formations, and (4) in the nature and distribution of fossil faunas.

Observations are offered pointing to the conclusion that eastern Ouachita trough is a continuation of the Appalachian geosyncline, and that eastern Llanoria may have joined southwestern Appalachia. In Texas, the Ouachita trough is traced under cover by means of well samples and other evidence. The Arbuckle geosyncline in southern Oklahoma appears not directly related to the Ouachita trough nor to the Llanorian land mass.

Other tectonic features, too numerous to list, bear on the subject. Among these are (a) relatively stable blocks like the Floridian platform, (b) flexures and faults with persistent trend, and (c) downwarps such as the Mississippi embayment.

Post-Paleozoic sediments of the Gulf region probably exceed 15,000 feet in thickness, a figure equal to the greatest depth of the Mexican Gulf. Since parts of the region are known to have been land in Paleozoic time, it is suggested that much of the depression in the Gulf and bordering territory is post-Paleozoic in age.

Graptolite-bearing deposits in the eastern part of the Appalachian trough are sharply differentiated faunally and lithologically from other sediments in this region but correspond very closely to the deposits of the Ouachita trough. Relations indicate continuity of these graptolitiferous rocks and seem to preclude possibility of so-called Gulf faunal invasions by the way of the Mississippi embayment at least in Ordovician time. This embayment appears wholly post-Comanchean in age.

The old lands of the Mexican Gulf region are believed to have been depressed beginning with the orogenic movements of late Paleozoic time. The possible existence in the Gulf area of Triassic basins comparable to those of northeastern America in like geologic relations is suggested, and the formation of extensive salt deposits in Louisiana, Texas and probably reaching a considerable distance beneath the Gulf, is assigned to the Mesozoic.

Following this paper there was a discussion by L. L. Folly of the Mid-Kansas Oil & Gas Co.; K. K. Kimble, consulting geologist, and J. W. Merritt, also a consulting geologist.

### PRAIRIE'S ANNUAL MEETING

At the annual meeting of stockholders of the Prairie Oil & Gas Co. held in Independence, Kans., on April 12, all the directors of the company were re-elected. The directors elected the old board of officers, W. S. Fitzpatrick, chairman; Nelson K. Moody, president; Dana H. Kelsey, vice president and general manager; A. B. Hookins, treasurer, and John Hollihan, secretary.

## ADVANCE IN ALL MOTOR FUELS CONTINUES

(Continued from Page 28)

new motors require a lubricant with high flash and high viscosity necessitating the use of more steam refined stock and bright stock in compounding motor oils. Thus the trend has been to increase the output of these heavier oils with less stress being placed on production of the low viscosity neutral oils.

In Oklahoma the output of cylinder stocks has always been relatively small, only a few companies having lub plants at their refineries. The limited quantity of crude oil from which these steam refined cylinder stocks and bright stocks could be manufactured economically has been responsible for this condition. With the better grades of steam refined cylinder stock selling from 10 to 13 cents a gallon and the bright stocks selling from 29 to 35 cents a gallon and the fuel oil residuum from which they are made worth only 2 cents a gallon or less at the refineries it is certain that refiners over the next few months will secure the maximum yield of the cylinder stocks. In this connection it is pointed out that improvement in manufacturing methods has increased the yield of stock obtainable and crude oils formerly considered worthless in lub plants are now being used when the superior grades are not available.

**Kerosene and Distillates**

The price range on 41-43 water white kerosene on Tuesday was 6⅝ to 6⅞ cents. These prices prevailed although a few refiners in the Middle West and North Texas were selling from one-eighth to one-quarter cent under these prices when quoting on a Group 3 basis. A number of sales have been made by Oklahoma refiners on a basis of the present market for delivery over the remainder of the month. The 40-41 grade was bringing 6¾ to 6⅝ cents and the 42-44 grade 7 to 7⅛ cents.

Flash and color are about the only specifications stressed by buyers of furnace oil distillates. Several refiners are refusing to sell under 4 cents and will close the season at that price. Other material is available as low as 3½ cents.

**Gasolines and Naphtha**

The 90 cars of U. S. Motor gasoline reported as sold by representative refiners in Oklahoma on Monday were about equally divided between the 7⅝ and 7½-cent price. With the exception of one car at 7 cents no sales under the 7⅜-cent price were reported. Although the spot market does not appear active in Oklahoma the contract movement according to most of the sellers has picked up steadily since the first of April.

The U. S. Motor gasoline grade has advanced an eighth cent each week for the past four weeks. Predictions are heard in the trade that this program will continue until an 8-cent price is established about the middle of May. Others believe that it will be necessary to advance prices more slowly in order to maintain a steady movement.

There is little that is new in the higher gravities. For domestic movement several refiners have made the same advances as in the U. S. Motor grade. For export movement however refiners who are anxious to move material are offering 390 endpoint at 7⅝ and 7¾ cents for 375. Naphtha prices were advanced an eighth cent.

**Natural Gasolines**

The expected advance in Grades B and BB natural gasolines explained in these columns last week materialized. Both grades advanced to 7¾ cents and on Tuesday were only one-quarter cent under the A and AA grades. The demand and supply of these grades for the next few months will be such that there will be little or no difference in prices. The C grade has advanced to 7½ cents and is strong at that price.

The demand for natural gasolines fluctuated during the past week and the A and AA grades were lower the latter part of last week. The buying improved the first of the week and the 8-cent price was again established.

**Lubricants and Wax**

Refiners who furnish finished motor oils to the trade state that the increased gasoline demand is being accompanied by a similar increase in their lubricants. Among the stocks, as previously explained, Oklahoma refiners have advanced their price the increase of the past week in most instances being 1 cent. Neutral oil prices are unchanged.

The wax market is inactive with no changes in prices.

## Late Fields

(Continued from Page 38)

companies reduced production by 58,274 bbls. as shown by a comparison of the 24-hour gauges for last Saturday and Sunday. In the 24 hours ending at 7 o'clock Sunday morning 109,588 bbls. of oil was produced in the field, as compared with 51,314 bbls. produced in the next succeeding 24 hours. The following table shows the production for the two days by companies:

| Company— | Apr. 13 | Apr. 14 |
|---|---|---|
| Barnsdall | 12,488 | 7,202 |
| Continental | 2,591 | 668 |
| Mid-Continent | 8,821 | 6,060 |
| Magnolia | 12,251 | 7,848 |
| Prairie | 46,192 | 18,074 |
| Shell | 4,424 | 538 |
| Prod. & Refiners | 2,300 | 135 |
| Skelly | 6,681 | 4,539 |
| Tidal | 6,872 | 4,743 |
| Shaffer | 643 | 358 |
| Atlantic | 1,745 | 181 |
| J. S. Cosden | 2,715 | 870 |
| Turman | 1,866 | 53 |
| Total | 109,588 | 51,314 |

The production in the greater Seminole area was running below the proration figure on the gauge for Sunday. The combined production of the Seminole and St. Louis Pools was 302,953 bbls. which is a low figure for these two pools.

The Carter Oil Co.'s No. 1 Factor, SE cor. NW Section 26-7-6, on the east side of the Little River Pool is a failure in the Wilcox sand at a total depth of 4,206 feet. The company is plugging back to the Cromwell sand at 3,083 feet where it had a good show of gas.

Indian Territory Illuminating Oil Co.'s No. 1 Bodine, C NW SE, Section 24-11-3w, cemented the 9-inch casing at 4,866 feet, and after drilling out the plug found a gas sand 4,872-77 feet with 70,000,000 feet of gas. The well is to be shut in as a gas well. When gauged it was found to have 1,735 pounds rock pressure.

The Indian Territory Illuminating Oil Co.'s No. 1 fee, C SE SE Section 24-11-3, which was completed on December 4, 1928, has produced 550,715 bbls. of pipe line oil up to and including April 4, 1929. The production of the well on Tuesday morning's gauge was 3,378 bbls. of oil. It was cutting 7 per cent, which is a decrease on both the oil and water from the previous day's gauge.

The Carter Oil Co.'s No. 2 Durant, NW cor. NE NE, Section 18-16-9, Creek County, has been deepened from the Bartlesville sand to the Dutcher. The old total depth was 2,755 feet. The well has been producing since 1920. The top of the Dutcher was 3,033 feet and the first 24 hours' production was 190 bbls. The area looks favorable for Dutcher sand production and there is a possibility that the well will open a new pool in this well-known sand.

### GULF COAST

HOUSTON, Tex., Apr. 16.—Humble Oil & Refining Co.'s No. 3 Brazos at DeWalt, Fort Bend County, was completed Monday flowing 1,200 bbls. of pipe line oil from a sandy shale at a total depth of 3,568 feet. This company's No. 4 Brazos was brought in flowing 257 bbls. of pipe line oil at 3,441 feet. The latter has a pressure of 1,300 pounds and former 375 pounds.

Humble Oil & Refining Co.'s No. 1 Mueller, Raccoon Bend, opened a new gas producing horizon at 1,847 feet Tuesday blowing an estimated 15,000,000 feet of gas daily at 1,847 feet. Pressure is 590 pounds. Previous gas wells have been completed between 1,000 and 1,200 feet.

T. G. Shaw and Texas Exploration Co.'s No. 2 Fitzsimmons-Barron, Pierce Junction, came in flowing an estimated 500 bbls. daily after being deepened to 3,869 feet.

Yount Lee Oil Co.'s No. 99 McFaddin, Spindletop, has been completed flowing 1,500 bbls. daily from sand at a total depth of 4,012 feet. The same company's No. 77 Gladys City, Spindletop, is flowing 1,000 bbls. daily from sand at 3,675 feet. Gulf Production Co.'s No. 52 Davis, Big Creek, is flowing 200 bbls. daily at 3,847 feet.

### NEW MEXICO

LOS ANGELES Calif., Apr. 16.—George Getty advises that his No. 4, 15 miles east of Carlsbad, N. Mex., came in flowing 1,464 bbls. the first day from 10 feet of sand. Pay was topped at 1,345 feet and well when shut in because of inadequate tankage was flowing 75 bbls. per hour, the oil testing 22 degrees. The well is flowing through 10-inch casing with no tubing and is reported as the largest well ever finished in eastern New Mexico. Getty had previously finished several smaller producers which, however, may be due to the fact that the bit in each case was only drilled into pay about 2 feet.

### MICHIGAN

MUSKEGON, Mich., Apr. 16.—Two new producers were brought in yesterday in the Dundee and lower Traverse pay sands, respectively. Swastika Oil & Gas Co.'s No. 2-A Gilbert, NW NE, Section 7-10-16, Muskegon Township, flowed 35 to 40 bbls. an hour from the Dundee at 2,023-27 feet. Muskegon Oil Corp.'s No. 2 Nichols, NW NW, Section 8-10-16, will make 100 bbls. initial in the lower Traverse pay sands at 1,900-05 feet.

## FIELD MEN INTERESTED IN SOLVING PROBLEMS

**By R. Van A. Mills**

When, after their day's work more than 100 Burbank Field men who work for different oil and gas companies will gather once a month in their glad rags or in overalls and greasy field clothes (nobody cares which) and discuss and work out their common operating problems together, and when they get so interested that they forget to go home until nearly midnight, it is safe to say that the A.P.I. Burbank Field Chapter is an assured success. The best thing about these meetings is the way the boys in overalls are attending them and taking the lead in the discussions.

Roustabouts, pumpers, superintendents and general managers were present at the regular A.P.I. Burbank Field Chapter meeting on April 10. The subjects covered were "A Proposed Unit Operations Plan for Repressuring the Burbank Field." "Water Problems in the Burbank Field," "Bottom Hole Cementing Methods," "Methods of Gauging Working Barrels," and numerous questions relating to these subjects that different individuals submitted for answer by the others present.

The value of meetings of this kind cannot be overestimated. Every man who attends them gets a liberal education upon the solution of all sorts of field problems. All of those present are invited to take part in the discussions and it is no time or place to be bashful. The next meeting in the Burbank Field is scheduled for May 8, at 7:30 p. m. in the Sinclair Community Hall at Shidler.

A Seminole Field Chapter of the American Petroleum Institute will be organized on Wednesday, April 17, and another in the Eldorado Field, Kansas, will be organized on Friday, April 19.

### W. N. LONG DIES

HOUSTON, Tex., Apr. 13.—W. N. Long of Houston, president of the Galena-Signal Oil Co., dropped dead at the corner of Main and Prairie Streets Thursday. He had been associated with the oil interests of Texas for 20 years. He came to Houston in March, 1917, as secretary of the Galena-Signal company of Texas. In July, 1922, he was made vice president. Later he was elevated to the presidency. Before joining the Galena-Signal, Long was associated with the Gulf and The Texas Companies.

Mr. Long was born at Jackson, Ohio, on July 18, 1874. He came to Texas in 1903, making his headquarters at Port Arthur, where he was in charge of the commissionary and pay rolls of the Gulf Refining Co. until July, 1909. He was next associated with The Texas Company in charge of the Port Arthur office at the refinery, holding this position until February, 1917, when he resigned to come to Houston as secretary of the Petroleum Refining Co., which was reorganized as the Galena-Signal Oil Co. of Texas.

## EXPOSITION DIRECTORS MEMORIALIZE R. W. EGAN

The following memorial was prepared and adopted by a special committee of the board of directors of the International Petroleum Exposition upon the death of Robert W. Egan, vice president and general manager of The Oil and Gas Journal and a director of the exposition, who passed away December 15, 1928:

Whereas, Robert W. Egan was for many years vice president and general manager of The Oil and Gas Journal and a faithful and valuable servant to the petroleum industry, and

Whereas, he was a member of the board of directors of the International Petroleum Exposition, and an important factor in the establishment of the exposition as a great influence in the scientific, technical and educational advancement of the petroleum industry, and

Whereas, in his labors as a journalist, publicist, student and business man, he was a public spirited citizen, a loyal friend, and a wise counselor;

Whereas, his friendly association, wise counsel, high ideals, wide experience, foresight and business sagacity have been a source of inspiration to his fellows, and an invaluable asset to the petroleum industry and the exposition, and

Whereas, Almighty God in his Infinite Capacity has caused his labors to cease among us and we shall miss the precepts and examples of his sterling character.

Now Therefore, Be It Resolved, that we extend to his widow and his associates this expression of our sympathy and affection, and that a copy of this resolution be spread upon the minutes of the exposition and a copy be furnished to his family, his associates and the press.

Adopted this 8th day of April, 1929, by the board of directors of the International Petroleum Exposition, Tulsa, Okla.

(Signed) THE INTERNATIONAL PETROLEUM EXPOSITION,
By W. G. Skelly, President.
Attest: William Holden, Secretary.

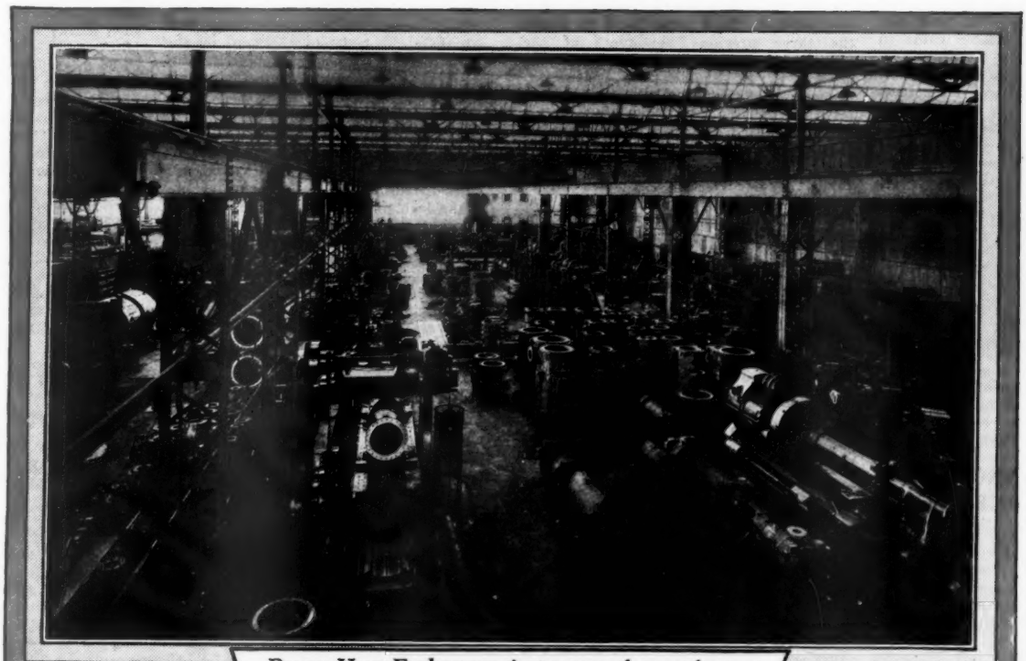
### RICHFIELD-WALBURN PROGRAM

NEW YORK, Apr. 15.—C. M. Fuller, president of the Richfield Oil Co. of California, who has been in New York for the past fortnight arranging for the marketing of Richfield's products in Eastern markets, is expected to announce shortly a change in the corporate structure of the Walburn Petroleum Co., this city, control of which was recently purchased by Richfield.

Mr. Fuller has been engaged in appraising the Walburn company, which is distributing Richfield products in New York, New Jersey and New England, and will enlarge its territory to take in Pennsylvania and the New England states, as well as other points on the Atlantic seaboard.

Richfield is understood to have been negotiating for the acquisition of one or more large independent marketing groups in the East to facilitate its expansion program in this territory, but it is now believed the expansion will be accomplished through enlarging the scope of operations of Walburn Petroleum.

# WE LIVE in an Age of Specialists



*Braun Heat Exchangers in process of manufacture*

CORRECT engineering theory and proper materials of construction are not alone sufficient to recommend the purchase of industrial equipment. Of equal concern to the purchaser are the manufacturing methods and facilities employed by the firm supplying the equipment, its organization, and its specialized engineering knowledge. These largely determine the reliability, the efficiency and the life of its products.

**BRAUN**

**C·F·BRAUN & CO.**

*Manufacturing Mechanical Engineers*

**ALHAMBRA, CALIFORNIA**

**TULSA** Kennedy Bldg. **DALLAS** Republic Bank Bldg. **HOUSTON** Neils Esperson Bldg. **CHICAGO** Engineering Bldg. **NEW YORK** 120 Broadway

# Of Interest to Sales Departments

## Tourists' Service Bureau Issues Maps To Encourage Travel

NEW YORK, Apr. 13.—Standard Oil Co. of New York, which has taken the lead in co-operating with motorists through dissemination of touring information, will distribute more than 5,000,000 automobile road maps through its Tourists' Service Bureau during 1929. In addition, the bureau will also distribute millions of maps published by other eastern oil companies, and covering territories not shown on the Socony maps. The company's tourist bureau, now in its fourth year, has won instant favor from motorists, not only in Standard of New York's territory, but in other parts of the United States as well, and has been found of appreciable value in building good-will for the Socony trademark. The tourist bureau maintained by the New York company, aside from furnishing motorists with much-needed data on routes, road conditions, etc., constitutes a constructive supplement to the advertising and other publicity work which the company is doing.

The Socony Tourists' Service Bureau is an outgrowth of a map service which the company inaugurated in an experimental way several years ago. Originally, the New York company contracted with the General Drafting Co., Inc., to supply automobile road maps for such of its patrons as requested touring information. This work was originally carried on from the drafting company's offices. The response from the public was so general and immediate that the service was transformed into a regular tourists' bureau several years ago, and

(Continued on Page 178)

## SHELL UNION ANNOUNCES NATIONAL MARKET PLANS

NEW YORK, Apr. 15.—Shell Union Oil Corp., in a letter to stockholders this week, announces the expansion of its marketing operations to the point where it will soon have distribution in every part of the United States with the exception of Texas. Particular attention is called by the company to the enlargement program now under way in the East, notably New England. The statement shows that as of April 1, 1929, Shell Union and subsidiaries had pump outlets totaling 29,600, divided as follows: Shell Petroleum Corp., 15,000; Shell Oil Co., 12,000; Shell Company of Canada, Ltd., 1,750, and Shell Eastern Petroleum Products, Inc., 850.

Announcing the expansion, J. C. van Eck, president, says: "Of especial significance at this time is the fact that Shell products have been introduced in New England and will soon be available to motorists throughout the East. Shell, in becoming a national institution, stands on the threshold of even greater achievement and expansion.

"Shell has turned the filling station into a service station—has forged ahead on the creed that service means, above all, full value in merchandise; that excellence of product is paramount, and that nothing can take the place of quality. The reward of strict adherence to this principle has been the opportunity to grow, as the reward of service is always the right to succeed. The quality of Shell gasoline and Shell motor oil has carried the Shell colors across the Continent. Today, the Shell producing, transporting, refining and marketing organization, with complete control of every step in the manufacturing process, forms one of the outstanding self-contained industrial institutions of America."

## STANDARD PRESIDENT TELLS HOW NEW PAINT AIDED GASOLINE SALES

By Roelif Loveland*

After he had been officially installed as the fourth president of the Standard Oil Co. of Ohio, last April, W. T. Holliday said to himself: "We must do something. We've got to be noticed."

His chair creaked as he leaned back and figured, for he is a big man with much height and broad shoulders, developed on the Reserve football team and later the Cornell crew.

"We've got to hit 'em in the eye," said Mr. Holliday, or words to that effect, and he called into consultation Arthur Gray, a friend and an artist.

Now these two young men got busy and plotted. Each tried hard to forget the three previous presidents of the Standard Oil Co. of Ohio—John D. Rockefeller, F. B. Squire and Andrew P. Coombe. Not that they lacked all respect for these worthy gentlemen—but simply that the thing they were about to do might have been a bit too colorful to have met with the entire approval of the earlier presidents.

First they painted the Standard Oil trucks flaming red. Gray showed how shading would increase visibility 50 feet. Then they started on the gasoline filling stations themselves. Holliday, sitting in his office in the East Ohio Gas Co. Building, chuckled as he told the story:

"Gray said a purple stripe would help, and the station across the street from this building was painted. The top red, the center white, the base purple.

"I said: 'Migod, Gray—red and purple—that's terrible.'

"Gray said: 'You're crazy. It's elegant.'

"It did attract attention. Men would drive in and look at the color scheme and get out of their cars and curse. One woman walked back and forth wringing her hands and bewailing: 'It isn't done—It doesn't match—it's an insult—it's terrible.'

"And when the red salesmen's cars with their purple fenders got out on the street, they pretty nearly stopped traffic. Finally I had to say: 'Can the purple and make it blue instead!' Now we like it ever so much better."

* * *

Excerpts from the president's report indicate that Cleveland likes it, too. . . . "Sales in gallons of Red Crown gasoline for the last six months of 1928 exceeded the total gallonage of Red Crown sold for the same period in 1927 by approximately 30 per cent. . . . The total sales in gallons of all gasoline for the full year 1928 were 38 per cent above the total for 1927. . . . The total gallon-

(Continued on Page 178)

*Cleveland Plain Dealer.

## DIXIE DISTRIBUTORS, INC. TO ORGANIZE IN NEBRASKA

The Dixie Distributors, Inc., a co-operative organization which has been active in several states of the Middle West, has been incorporated in Nebraska. The Nebraska officers are: President, O. J. Shaw, Lincoln Oil Co., Lincoln; vice president, W. B. Watson, W. B. Watson Co., Albion, and secretary and treasurer, E. Neustrom, Upland Service Oil Co. Directors are S. A. Wassum, Tekamah Oil Co.; Ora Linderman, Linderman Brothers Oil Co., Grand Island, and C. C. Rosenberg, Rosenberg Brothers, Lexington.

The marketing plan of the Dixie Distributors, Inc., is to include other jobbers, as licensed, giving each jobber an exclusive but restricted marketing area. Standards of quality and service are established. Minimum specifications for both gasoline and lubricating oils are rigidly prescribed. Any member violating the specifications or standards is liable to the forfeiture of his bond and Dixie "franchise."

Michigan, Wisconsin, Ohio, Indiana, Illinois, Iowa, Nebraska and Kansas have procured distinct state franchises. Each state is self-governing and enforces its own rules, as long as they do not conflict with the set standards and specifications of the original "Dixie distributors."

### TEXAS COMPANY IN ALBERTA

CHATHAM, Ontario, Apr. 13.—Announcement has been made by P. H. Savage, western Canada manager of the Texas Oil Co. of Canada, that arrangements have been completed for distribution of the company's products in southern Alberta. A district office in Calgary will supervise distribution in the four western provinces; while in southern Alberta distribution will be made by the Northern Light Refineries, Ltd. of Lethbridge with Norman Kirkham as manager.

## REVISED REPORT SHOWING CONSUMPTION BY STATES

Below is revised report of the American Petroleum Institute showing gasoline consumption by states for 1928 and 1927 based on gasoline tax reports and inspection reports. Illinois, Massachusetts and New York are not given.

**GASOLINE CONSUMPTION BY STATES, 1927 and 1928**
(Thousands of gallons)

| | 1928 | 1927 |
|---|---|---|
| Alabama* | 168,276 | 147,225 |
| Arizona* | 50,455 | 41,237 |
| Arkansas† | 119,184 | 99,394 |
| California* | 1,101,404 | 1,017,681 |
| Colorado† | 142,015 | 129,184 |
| Connecticut* | 173,437 | 159,953 |
| Delaware* | 27,706 | 24,273 |
| District of Columb'a* | 63,579 | 57,804 |
| Florida* | 224,704 | 247,248 |
| Florida† | 226,904 | 247,951 |
| Georgia*† | 206,138 | 192,262 |
| Idaho* | 50,148 | 42,343 |
| Indiana* | 388,466 | 349,995 |
| Iowa*‡ | 306,651 | 309,098 |
| Kansas† | 315,671 | 270,615 |
| Kentucky* | 134,936 | 118,273 |
| Louisiana* | 169,046 | 151,605 |
| Maine* | 82,203 | 74,738 |
| Maryland* | 143,375 | 131,500 |
| Michigan*‡ | 673,335 | 593,372 |
| Minnesota‡ | 328,434 | 289,686 |
| Mississippi* | 129,157 | 117,756 |
| Missouri* | 355,001 | 323,052 |
| Montana* | 74,272 | 53,248 |
| Nebraska* | 198,446 | 169,677 |
| Nevada* | 14,378 | 12,720 |
| New Hampshire* | 48,235 | 45,722 |
| New Jersey* | 422,348 | ..... |
| New Mexico* | 36,793 | 30,654 |
| North Carolina* | 246,087 | 219,583 |
| North Dakota† | 117,169 | 88,641 |
| Ohio* | 860,631 | 770,658 |
| Oklahoma* | 280,781 | 251,462 |
| Oregon* | 144,283 | 130,885 |
| Pennsylvania* | 759,927 | 691,557 |
| Rhode Island* | 65,872 | 61,436 |
| South Carolina* | 109,938 | 101,772 |
| South Dakota† | 110,652 | 88,031 |
| Tennessee* | 171,276 | 148,952 |
| Texas* | 670,817 | 591,447 |
| Utah* | 47,634 | 41,774 |
| Vermont* | 37,312 | 33,167 |
| Virginia* | 183,447 | 166,782 |
| Washington* | 227,043 | 203,421 |
| West Virginia* | 111,345 | 102,655 |
| Wisconsin* | 357,146 | 313,586 |
| Wyoming* | 31,794 | 26,218 |

The states indicated (*) have sales tax laws, and those marked (†) have inspection laws, under which the figures were collected. Those marked (‡) are on an import or receipt basis.

## HOLD "TAKE IT YOURSELF" CANNOT BE REGISTERED

By Charles E. Kern
*Washington Bureau, The Oil and Gas Journal*

WASHINGTON, D. C., Apr. 12.—"Take It Yourself" is not registrable as a trade-mark for oil and greases, according to a decision by Thomas E. Robertson, Commissioner of Patents.

The Standard Oil Co. of New Jersey had sought registration of the label for use in connection with pumps for dispensing gasoline, "from which the purchaser may obtain the gasoline upon the insertion of a coin into the device."

The words of the mark, the opinion of the commissioner states, "very clearly state the manner in which the goods are to be merchandised," and the mark is therefore not registrable because it is descriptive. Cases are cited in which such marks as "Drive It Yourself," "Dry Dip," and "U-Put-On," have been held to be descriptive and not registrable.

"In view of the common practice in grocery stores and cafeterias of permitting the customer to help himself and of the fact that measuring pumps have been invented and patented to be used in connection with automatic vending mechanism, so that a person, by depositing the proper coin in a slot, can get the desired amount of gasoline," the commissioner declares, "it is evident that the mark would indicate to purchasers that they did not have to be served by an individual, but could 'take' the goods in whatever way they were arranged to be taken and make appropriate payment therefor."

### PURPLE AVIATION GASOLINE

Ethyl Gasoline Corp. (owned jointly by General Motors Corp. and Standard Oil Co. of New Jersey), will shortly distribute Ethyl aviation gasoline through its distributors and at all major flying fields of the country. The new fuel will be dyed purple instead of the standard Ethyl red. Company has opened an aviation department at 25 Broadway, in charge of E. M. Walter.

Ordinary airplane fuel is a high-test gasoline, being higher in volatility than gasoline used for automobiles. By blending Ethyl compound with these aviation gasoline, the new antiknock fuel for high compression airplane motors has been produced.

### NEW TANKER LAUNCHED

CHATHAM, Ontario, Apr. 13.—John Irwin, president of McColl-Frontenac Oil Co. of Toronto and Montreal has returned from England, where he witnessed the launching at Haverton-on-Tees of the new McColl-Frontenac tanker "John Irwin." The "John Irwin" is a single-screw tanker 250 feet in length and 43 feet beam, of 2,650 deadweight tons, with five main oil cargo tanks on each side of the center line. It will be one of the largest tankers on the Great Lakes and will ply between the McColl-Frontenac terminals at Buffalo and the company's refinery at Toronto.

### IMPERIAL EXTENSION

CHATHAM, Ontario, Apr. 13.—Imperial Oil Co., Ltd. has purchased from the Toronto Harbor Commission a 17-acre site in the harbor terminals district, giving it a total of approximately 30 acres in this area. The price exceeded $200,000 and $100,000 will be spent in construction on the property at once. The site will be used for bulk storage and will provide extensive wharfage facilities for handling shipments from Montreal and Sarnia, the facilities available being ample for the largest lake vessels.

# Specially Designed for Oil Service

IN oil and gas fields, refineries, pump houses, and on oil pipe line systems, Kennedy 400-lb., 700-lb., 1000-lb., 1600-lb. test Gate Valves have a wide application.

Their heavy proportions, sound, strong metal, large disc-seating surfaces, unobstructed full opening, provisions for maintaining position of seat rings, gaskets, and packing, and perfect seating of disc are some of the features that assure efficient, trouble-free operation.

Other Kennedy products for the oil industry include standard, extra heavy, and extreme pressure globe, angle and gate valves, malleable iron screwed fittings and cast iron flanged fittings. These products are fully described and listed in the Kennedy Catalog, which will be sent on request.

THE KENNEDY VALVE MFG. CO. ELMIRA, N.Y.

WAREHOUSES

New York: 128-132 White St. Chicago: 1335-1337 S. Clinton St.
San Francisco: 448-450 Tenth St.

SALES OFFICES: New York, Philadelphia, Cleveland, Chicago, Atlanta, Salt Lake City, El Paso, San Francisco, Los Angeles, Seattle

# KENNEDY

VALVES-PIPE FITTINGS-FIRE HYDRANTS

# Did you ever hear of such a Gasoline ?

HERE are the specifications: 30 per cent Benzol equivalent . . . 55 gravity . . . 90 to 105 initial . . . 400 end point . . . 50 per cent off at 284 to 294 . . . both Doctor and Corrosion, O. K. . . . water white . . . good odor . . . and—

Priced to appeal to jobbers who are not in business for their health!

What a gasoline for high compression motors . . . for new Fords . . . for persons who know gravity doesn't mean a thing in comparison with 30 per cent Benzol Equivalent, low initial and end, good distillation curve and specifications that count!

Sell it as is, if you want to—or blend it with natural for a wonderful high test product.

This new gasoline is made by Burford Oil Company, general offices, Pecos, Texas. It is a special grade made possible only by the high non-detonating qualities of Winkler County crude. As only a limited amount can be made with present special equipment, wire or phone now for more complete details.

# BURFORD OIL COMPANY

Refinery and General Offices :: PECOS, TEXAS

# Handling Sulphur Crude in Refineries

## Utmost Care in Procedure Must Be Followed. Education and Strict Discipline Declared Necessary

By D. G. Cooper*
Safety Engineer, Shell Petroleum Corp.

With special reference to West Texas crudes, hydrogen sulphide ($H_2S$) occurs in solution with oil or is formed later through decomposition of sulphur compounds during the distillation of the crude or its derivatives in the various processes. Hydrogen sulphide is a colorless gas having the characteristic odor of rotten eggs and is sometimes termed "rotten gas." It is 1.2 times heavier than air and because of this, it obviously has a tendency to settle in low places or poorly ventilated areas. It is extremely poisonous, acts as a soporific, and is very corrosive to some metals. In other words, in high concentration one breath may be enough to paralyze the sense of smell and cause immediate unconsciousness. A few more breaths paralyze the breathing center and stop the heart action. As high concentration paralyzes the sense of smell instantly there would be no warning from odor in this case.

Hydrogen sulphide reacts readily with iron to form iron sulphide. In some cases this reaction is advantageous because the gas may be neutralized by contacting it with steel shavings, etc. On the other hand, it is a great disadvantage because if not neutralized by other means it unites with the iron of various pieces of apparatus with resultant weakening until a safety hazard is involved through the possibility of failure of the metal under pressure, or operating conditions. Iron sulphide if exposed to air oxidizes very readily and this oxidation may be so rapid that a glow may ensue, or sparks may be given off. If this occurs in the presence of an explosive mixture of vapor and air a serious explosion or fire may occur with attendant jeopardy to life and limb. The most common methods of neutralizing is the reaction of hydrogen sulphide with caustic soda or soda ash. These reagents are prepared in solution and injected directly into the crude or vapors containing hydrogen sulphide.

### Application of Precautions

A considerable amount of high sulphur crudes or crudes containing hydrogen sulphide is transported by pipe line and smaller amounts are transported by tank car. In the first case the gas is ever present at all points where the crudes discharge into tanks, since the hydrogen sulphide escapes through the tank vents with the lighter hydrocarbons. In the second case the same hazard exists and in addition the opening of tank cars for gauging and sampling also creates another source of liberation of the poisonous gas. In both instances all workmen, such as pumpers, gaugers and pipe fitters are apt to breathe the gas unless strict precautions are taken. Generally it is not practicable to neutralize the gas at this point, however, various mechanical means of confining it are taken. In many instances floating roof tanks which minimize evaporation and weathering are employed and the amount of gas escaping is so negligible that a serious hazard may not exist. However, cases are on record where concentration became appreciable when the floating roof was at low gauge and men have been overcome when descending upon these roofs. Gas masks are generally used when gauging floating roof tanks or when removing dome covers from tank cars, etc.

In the crude tank farms where the crude is stored for indefinite periods, the hazard exists in about the same way and has been handled chiefly in the way mentioned by employing floating roof tanks and the wide use of gas masks. The general experience in this line, however, is somewhat conflicting because some tests have shown that the concentration is below the critical point or would not affect the gauger or person involved. On the other hand, cases are on record where injury has resulted and to be entirely safe the utmost precaution is taken. In one attempt to get data on this subject white rats were put on floating roof tanks containing West Texas crude. The rats were kept for a month on several different tanks during which time practically all conditions as to height of roof, temperature, wind velocity, humidity and pressure were encountered and none of the rats were affected except one which crawled down partially between the roof seal and tank wall. This rat was found dead. These results might indicate that any poisonous vapor escaping from the tank vents dissipates quickly enough to prevent undue concentration. This theory, as mentioned before, was thrown out in view of the fact that in some cases it evidently did not hold true.

The danger of pyrophorous iron sulphide is ever present in all tanks containing high sulphur crude and much work has been done on suitable protective coating as a means of saving metal and avoiding the hazard of explosion and fires. Several kinds of paints have been found suitable for this purpose and are used quite generally.

### In Topping Process

In the topping process or the distillation of crude at normal pressure the hydrogen sulphide in solution, as well as some which is formed through decomposition, escapes from the vents of the various condensers while some is held in solution in the various distillates and gasoline. The amount escaping if no neutralizing agent were used would endanger life and deteriorate the equipment rapidly. For this reason liberal amounts of caustic soda solution are injected into the crude oil after it passes to the heating zone in order to neutralize as much of the hydrogen sulphide as possible. The endeavor of course is to neutralize all of it as quickly as it is formed but because of imperfect contact of reagents it is quite impossible. In many cases a large excess of reagent has been used without thoroughly neutralizing all the hydrogen sulphide present. Additional caustic soda solution is injected into the vapor lines before the vapor reaches the gasoline condensers. Aqua ammonia is introduced into the vapor streams at the entrance to the fractionating system chiefly to neutralize hydrochloric acid formed but no doubt to some extent this also helps to neutralize hydrogen sulphide.

The net result is to greatly decrease the quantity of hydrogen sulphide in the gasoline and distillates. Some which is not neutralized escapes with the uncondensed gases which are compressed and delivered to an absorption plant where further treatment may be made in either process. All equipment through which the gasoline and gas passes is designed with special attention to its tightness so that gas may not escape in areas in which operators work. Even with the utmost precaution this, however, sometimes occurs and the operators are warned continuously to be ever on the alert to correct any unsatisfactory condition that may arise.

The untreated gasoline produced still contains some hydrogen sulphide in solution and the same hazard in handling this product exists, as mentioned for the crude storage. Most of these tanks are generally equipped with floating roofs to minimize evaporation and the same precautions in gauging as for the crude tanks is practiced. On the operating units danger of pyrophorous or glowing iron sulphide is also present especially when the equipment is open for inspection and repairs and several cases are on record where fires have resulted from this phenomenon. As an added precaution it is the general practice to wash any equipment thoroughly with water or steam it out before opening it for repairs and especially before anyone enters it for repair work.

### In Cracking Process

In the cracking process or the decomposition of oil at high temperatures and pressures the presence of hydrogen sulphide not only presents a hazard from breathing the poisonous gas but the corrosive action on plant equipment occurs at such a rapid rate that safety measures must be enforced very rigorously to prevent equipment failures which could and might result in serious personal injury.

For the most part mechanical means have been employed to alleviate the attendant hazard although chemical treatment is used quite generally. In the course of the oil from the cracking units to the treated oil storage tanks the most volatile products are kept enclosed in gas-tight enclosures. This has been accomplished by well made up piping and a gas recovery arrangement for tanks, including an absorption plant whereby the gas that ordinarily might escape to the air is collected and disposed of as fuel at some of the furnaces after having been stripped of gasoline.

Washing the cracked distillate with a solution of caustic soda during its discharge from the unit into rundown tanks greatly minimizes the hazards encountered. In the cracking process greater amounts of hydrogen sulphide are encountered than in other processes because of the high temperature and pressure employed with resultant decomposition of sulphur compounds. Therefore the gauging and sampling of oil in receiving tanks presents a greater hazard than at most any other point in the refinery. However, the degree of danger has been reduced by equipping the tanks with gauge glasses and sampling lines to avoid the necessity of exposing the gaugers to the gases, which happens if gauging and sampling is attempted through open gauge hatches such as practiced when handling other types of oil. Most of these tanks are so equipped that it is very seldom necessary to open the gauge hatch for any purpose and when it does become necessary the use of the gas masks by the workmen is required and enforced.

The fixed gas that must be handled from the cracking units separately from a distillate does not present a problem of such proportion as the distillate for the reason that it is handled through pipe lines to the point of disposition which is usually in the furnaces. However, extreme precaution is exercised so that no leaks develop to allow the gas to escape in quantities sufficient to cause injury. This is particularly true where the piping passes through the unit control house. As an added precaution the houses are kept well ventilated by leaving windows and doors open at all times.

The hazard attendant to corrosion of plant equipment rendering it unsafe has been reduced to a great degree, but still is a serious problem. Frequent inspections and pressure tests have been successful in showing up weak equipment. Where possible and practicable parts of plant equipment exposed to the corrosive action of these gases have been protected by covering the exposed surfaces with linings so that the metal of the equipment itself is affected as little as possible. The corroded or damaged linings are generally replaced when their weakened condition warrants it. It is also the tendency at the present time with some equipment to construct it of sufficient strength to allow for considerable corrosion before it becomes damaged or weak.

Injecting lime into the cracking unit with the oil feed has to some degree lessened the corrosion rate of the plant equipment.

### Safety Rules and Regulations

As the name implies the safety department has to do with assimilating the necessary information to be posted in conspicuous places around the refinery and in some instances to see that each individual is furnished with the necessary literature to keep him well informed as to the hazards attendant to his particular job. In addition to this a trained safety engineer makes frequent inspections of the whole refinery observing the various practices as they are followed out and on the whole devotes his total time to the improvement of conditions for the lessening of hazards. Safety meetings are held very frequently in which the operators from various sections of the plant are present and it is the intention to draw their personal opinion of conditions so that preventive measures may be formulated. The safety department also makes it a point to discuss these matters with the various department heads in order that all issues are kept alive at all times, and that no inertia or weakening of the enforcement of existing rules may develop. For the particular problem at hand the following bulletin governs the general precautionary measures and this is supplemented by an additional amount of minor bulle-

(Continued on Page 177)

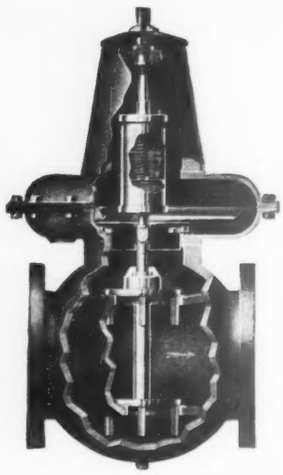
### ALL DEPARTMENTS MUST BE CO-ORDINATED

The hazard of handling sulphur crudes at refineries is so general it becomes a problem which must be handled in a systematic and scientific manner. The ideas of all departments, such as chemical, engineering and operation, must be co-ordinated in order that safety measure rules and regulations may be as complete as possible.

In handling such a problem, the plant laboratory comes first in importance. Its duty is to make preliminary investigations of the crude oil to be handled, giving the chemical aspects of the case and securing sufficient data so that the operating units and the plant as a whole may be properly informed before the hazard is encountered. Next in importance is the safety department, which formulates all existing data into a set of rules and regulations, taking the necessary steps to properly inform the various departments as to the conditions involved, etc. Next in line come the operating departments which must follow out the procedure set and handle neutralization processes, next the engineering department, which makes the necessary inspections, reports upon safety conditions with reference to the strength of materials and equipment, etc.

*Petroleum section, Midwest Safety Conference, National Safety Council, Chicago.

McALEAR
Credentials
for your Oil and Gas Specialties
History
Over 25 years of successful service — that's McAlear's history. And McAlear's automatic and mechanical control devices are carrying on this success in the oil industry because they are carefully designed and constructed to meet specific oil industry conditions—because they are sold and serviced by McAlear-trained engineers, capable and eager to make sound, practical recommendations for every type of service—and because stocks of all practical sizes are maintained at strategic points to insure prompt service.
These are important buying reasons. Specify McALEAR. IT PAYS.
McALEAR MFG. CO.
1901-07 S. Western Ave.
Chicago, Ill.
Sales Representatives
R. C. Flournoy, Jr., Manager, Oil Industry Division, Tulsa, Oklahoma
D. V. Emery Co., Inc., Tulsa, Oklahoma
Walter J. Allan, Dallas, Texas
Lewis & Whiting, Denver, Colorado
Smith Booth Usher Co., Los Angeles, California
Way Engineering Co., Houston, Texas
Allan Engineering Co., Amarillo, Texas
Sullivan Valve & Engineering Co., 910 Arizona, St., Butte, Montana
STOCKS, FOR IMMEDIATE SHIPMENT ARE MAINTAINED AT TULSA—CHICAGO—LOS ANGELES
Products
McALEAR offers the following complete line of specialties in all practical sizes:
LIQUID LEVEL CONTROLLERS
GAS PRESSURE REGULATORS
CASINGHEAD REGULATORS
BACK PRESSURE AND VACUUM REGULATORS
GAS FUEL BOILER GOVERNORS
SUCTION STRAINERS
STOP AND CHECK VALVES
GASOLINE TRAPS
LIQUID LEVEL DRIP TANK CONTROLLERS
McALEAR



**A Vapor Recovery System Is Entirely Dependent Upon the Tank Relief Valve**

This valve has the low tank pressure on one side and the high compressor suction vacuum on the other. It must let the pressure out and prevent the vacuum from passing to the tank. To be most effective it must function on not to exceed ¼" water pressure.

Hundreds of installations by the most prominent operators have proven the Davis *Supersensitive* Gas Relief Valve to be highly efficient and reliable for this service.

Trust Davis Automatic Valves for accurate pressure control.

G. M. DAVIS REGULATOR COMPANY
409 Milwaukee Avenue,
CHICAGO, ILLINOIS

WESTCOTT & GREIS, Inc.
*Sales Engineers:*
TULSA LOS ANGELES DALLAS

Automatic valve makers for over fifty years

DAVIS VALVE SPECIALTIES

O&GJ 4-18-Gray


## BUREAU OF MINES REPORT FOR MONTH OF FEBRUARY

### PRODUCTION OF CRUDE PETROLEUM BY FIELDS AND STATES WITH CLASSIFICATION BY GRAVITY

(Barrels of 42 U. S. gallons)

| | February, 1929 | | January, 1929 | | Jan.-Feb. | Jan.-Feb. |
|---|---|---|---|---|---|---|
| FIELD: | Total | Dy.av. | Total | Dy.av. | 1929 | 1928 |
| Appalachian | 2,350,000 | 83,900 | 2,583,000 | 83,300 | 4,933,000 | 4,811,000 |
| Lima-Indiana | 99,000 | 3,500 | 108,000 | 3,500 | 207,000 | 256,000 |
| Michigan | 130,000 | 4,600 | 159,000 | 5,100 | 289,000 | 61,000 |
| Ill.-S. W. Ind. | 534,000 | 19,100 | 589,000 | 19,000 | 1,123,000 | 1,171,000 |
| Mid-Continent | 44,488,000 | 1,588,900 | 48,760,000 | 1,572,900 | 93,248,000 | 86,345,000 |
| Gulf Coast | 3,840,000 | 137,100 | 4,253,000 | 137,200 | 8,093,000 | 6,903,000 |
| Rocky Mountain | 1,951,000 | 69,700 | 2,141,000 | 69,100 | 4,092,000 | 4,571,000 |
| California | 22,301,000 | 796,500 | 23,386,000 | 754,400 | 45,687,000 | 37,066,000 |
| United States total | 75,693,000 | 2,703,300 | 81,979,000 | 2,644,500 | 157,672,000 | 141,184,000 |
| STATE: | | | | | | |
| Arkansas | 2,145,000 | 76,600 | 2,324,000 | 75,000 | 4,469,000 | 5,301,000 |
| California | 22,301,000 | 796,500 | 23,386,000 | 754,400 | 45,687,000 | 37,066,000 |
| Colorado | 185,000 | 6,600 | 214,000 | 6,900 | 399,000 | 448,000 |
| Illinois | 453,000 | 16,200 | 506,000 | 16,300 | 959,000 | 1,027,000 |
| Indiana: | 85,000 | 3,000 | 87,000 | 2,800 | 172,000 | 159,000 |
| Southwestern | 81,000 | 2,900 | 83,000 | 2,700 | 164,000 | 144,000 |
| Northeastern | 4,000 | 100 | 4,000 | 100 | 8,000 | 15,000 |
| Kansas | 2,836,000 | 101,300 | 2,929,000 | 94,400 | 5,765,000 | 6,591,000 |
| Kentucky | 511,000 | 18,200 | 586,000 | 18,900 | 1,097,000 | 1,100,000 |
| Louisiana | 1,514,000 | 54,100 | 1,776,000 | 57,300 | 3,290,000 | 3,478,000 |
| Gulf Coast | 541,000 | 19,300 | 723,000 | 23,300 | 1,264,000 | 828,000 |
| Rest of State | 973,000 | 34,800 | 1,053,000 | 34,000 | 2,026,000 | 2,650,000 |
| Michigan | 130,000 | 4,600 | 159,000 | 5,100 | 289,000 | 61,000 |
| Montana | 275,000 | 9,800 | 306,000 | 9,900 | 581,000 | 724,000 |
| New Mexico | 67,000 | 2,400 | 76,000 | 2,500 | 143,000 | 145,000 |
| New York | 240,000 | 8,600 | 255,000 | 8,200 | 495,000 | 369,000 |
| Ohio | 482,000 | 17,200 | 532,000 | 17,200 | 1,014,000 | 1,123,000 |
| Cent. & East | 387,000 | 13,800 | 428,000 | 13,800 | 815,000 | 882,000 |
| Northwestern | 95,000 | 3,400 | 104,000 | 3,400 | 199,000 | 241,000 |
| Oklahoma | 20,070,000 | 716,800 | 22,884,000 | 738,200 | 42,954,000 | 40,055,000 |
| Osage County | 1,240,000 | 44,300 | 1,399,000 | 45,100 | 2,639,000 | 3,694,000 |
| Rest of State | 18,830,000 | 672,500 | 21,485,000 | 693,100 | 40,315,000 | 36,361,000 |
| Pennsylvania | 806,000 | 28,800 | 850,000 | 27,400 | 1,656,000 | 1,532,000 |
| Tennessee | 2,000 | 100 | 2,000 | 100 | 4,000 | 6,000 |
| Texas | 21,763,000 | 777,200 | 23,100,000 | 745,200 | 44,863,000 | 37,823,000 |
| Gulf Coast | 3,299,000 | 117,800 | 3,530,000 | 113,900 | 6,829,000 | 6,075,000 |
| Rest of State | 18,464,000 | 659,400 | 19,570,000 | 631,300 | 38,034,000 | 31,748,000 |
| West Virginia | 404,000 | 14,400 | 462,000 | 14,900 | 866,000 | 922,000 |
| Wyoming | 1,424,000 | 50,900 | 1,545,000 | 49,800 | 2,969,000 | 3,254,000 |
| Salt Creek | 903,000 | 32,300 | 916,000 | 29,500 | 1,819,000 | 2,394,000 |
| Rest of State | 521,000 | 18,600 | 629,000 | 20,300 | 1,150,000 | 860,000 |
| CLASSIFICATION BY GRAVITY (Approx.): | | | | | | |
| Light crude | 69,193,000 | 2,471,200 | 74,812,000 | 2,413,300 | 144,005,000 | 125,146,000 |
| Heavy crude | 6,500,000 | 232,100 | 7,167,000 | 231,200 | 13,667,000 | 16,038,000 |

### STOCKS OF CRUDE PETROLEUM HELD IN THE UNITED STATES (Barrels)

| AT REFINERIES (and in coastwise transit thereto). Reported by location of storage: | | Feb. 28 1929 | Jan. 31 1929 | Feb. 29 1928 |
|---|---|---|---|---|
| East Coast: | | | | |
| Domestic | | 8,129,000 | 8,340,000 | 8,463,000 |
| Foreign | | 5,690,000 | 5,072,000 | 4,323,000 |
| Appalachian | | 2,358,000 | 2,256,000 | 1,956,000 |
| Indiana, Illinois, Kentucky, etc. | | 2,839,000 | 2,856,000 | 2,904,000 |
| Oklahoma, Kansas, and Missouri | | 5,982,000 | 6,001,000 | 5,888,000 |
| Texas: | | | | |
| Inland | | 1,855,000 | 2,166,000 | 1,554,000 |
| Gulf Coast: | | | | |
| Domestic | | 8,190,000 | 8,130,000 | 7,996,000 |
| Foreign | | 273,000 | 310,000 | 263,000 |
| Arkansas and Inland Louisiana | | 1,260,000 | 841,000 | 578,000 |
| Louisiana Gulf Coast: | | | | |
| Domestic | | 3,103,000 | 2,731,000 | 6,063,000 |
| Foreign | | 1,845,000 | 1,717,000 | 1,230,000 |
| Rocky Mountain | | 2,066,000 | 2,098,000 | 1,610,000 |
| Total east of California | | 44,590,000 | 42,518,000 | 42,828,000 |
| ELSEWHERE THAN AT REFINERIES: | | | | |
| Domestic—Reported by field of origin: | | | | |
| Appalachian: | | | | |
| N. Y., Pa., W. Va., Eastern and Central Ohio: | Gross | 4,907,000 | 4,954,000 | 6,551,000 |
| | Net | 4,624,000 | 4,671,000 | 6,240,000 |
| Kentucky: | Gross | 962,000 | 955,000 | 1,191,000 |
| | Net | 815,000 | 808,000 | 1,063,000 |
| Lima-Indiana: | Gross | 1,268,000 | 1,298,000 | 1,306,000 |
| | Net | 1,085,000 | 1,115,000 | 1,153,000 |
| Illinois-S. W. Indiana: | Gross | 11,920,000 | 11,978,000 | 12,534,000 |
| | Net | 11,254,000 | 11,312,000 | 12,039,000 |
| Mid-Continent: | | | | |
| Oklahoma; Kansas; Central, Panhandle, North, and West Texas: | Gross | 257,085,000 | 254,591,000 | 242,223,000 |
| | Net | 244,863,000 | 241,984,000 | 229,696,000 |
| Northern Louisiana and Arkansas: | Gross | 28,642,000 | 29,145,000 | 28,609,000 |
| | Net | 25,842,000 | 26,353,000 | 26,095,000 |
| Gulf Coast: | Gross | 18,814,000 | 19,042,000 | 17,873,000 |
| | Net | 18,344,000 | 18,568,000 | 17,478,000 |
| Rocky Mountain: | Gross | 25,153,000 | 25,276,000 | 27,202,000 |
| | Net | 25,119,000 | 25,248,000 | 27,158,000 |
| Total pipe line and tank farm stocks east of California: | Gross | 348,751,000 | 347,239,000 | 337,489,000 |
| | Net | 331,946,000 | 330,059,000 | 320,922,000 |
| Foreign crude petroleum on Atlantic Coast | | 83,000 | 69,000 | 43,000 |
| Foreign crude petroleum on Gulf Coast | | 320,000 | 267,000 | 14,000 |
| | | 403,000 | 336,000 | 57,000 |
| TOTAL refinery, pipe line and tank farm stocks of domestic and foreign crude petroleum east of California | | 376,939,000 | 372,913,000 | 363,807,000 |
| CLASSIFICATION BY GRAVITY (Approx.): | | | | |
| East of California: | | | | |
| Light crude (24 degrees and above) | | 325,766,000 | 322,749,000 | 313,085,000 |
| Heavy crude (below 20 degrees) | | 51,173,000 | 50,164,000 | 50,722,000 |
| CALIFORNIA: Light | | 21,810,000 | 19,196,000 | 20,110,000 |
| Heavy (including fuel) | | 99,284,000 | *98,682,000 | 94,797,000 |
| PRODUCERS' STOCKS (not included above; approx.) | | | | |
| East of California | | 7,500,000 | 7,400,000 | ..... |
| California | | 1,863,000 | 1,223,000 | ..... |

*Revised.

### GASOLINE PRODUCTION BY THE VARIOUS METHODS, FEBRUARY, 1929

(Barrels)

| | Straight-run | % | Cracked | % | Natural gasoline | % | Total |
|---|---|---|---|---|---|---|---|
| East Coast | 2,233,000 | 52 | 1,718,000 | 40 | 340,000 | 8 | 4,291,000 |
| Appalachian | 731,000 | 62 | 386,000 | 33 | 61,000 | 5 | 1,178,000 |
| Ind., Ill., Ky., etc. | 2,486,000 | 54 | 1,965,000 | 43 | 143,000 | 3 | 4,594,000 |
| Okla., Kans., etc. | 2,822,000 | 62 | 1,457,000 | 32 | 254,000 | 6 | 4,533,000 |
| Texas | 4,024,000 | 56 | 2,513,000 | 35 | 671,000 | 9 | 7,208,000 |
| Louisiana and Arkansas | 1,176,000 | 52 | 656,000 | 29 | 438,000 | 19 | 2,270,000 |
| Rocky Mountain | 582,000 | 48 | 528,000 | 43 | 105,000 | 9 | 1,215,000 |
| California | 4,192,000 | 70 | 769,000 | 13 | 1,104,000 | 17 | 5,975,000 |
| Total | 18,246,000 | 58 | 9,992,000 | 32 | 3,026,000 | 10 | 31,264,000 |
| Total January, 1929 | 20,058,000 | 59 | 11,047,000 | 32 | 3,230,000 | 9 | 34,335,000 |
| Total Jan.-Feb., 1929 | 38,304,000 | 58 | 21,039,000 | 32 | 6,256,000 | 10 | 65,599,000 |
| Gulf Coasts | 3,715,000 | 50 | 2,760,000 | 38 | 913,000 | 12 | 7,388,000 |

(Continued on next page)

# Yellow Strand
## Rotary Lines

A frozen pipe! A sudden, tremendous strain! What then? Will your line stand this awful demand upon its strength and elasticity?

If it's Yellow Strand it will; for "heavy duty" and "Yellow Strand" mean the same thing, when the subject is wire line.

The reason? Over 50 years of wire rope making experience and imported steel wire drawn to our own specifications!

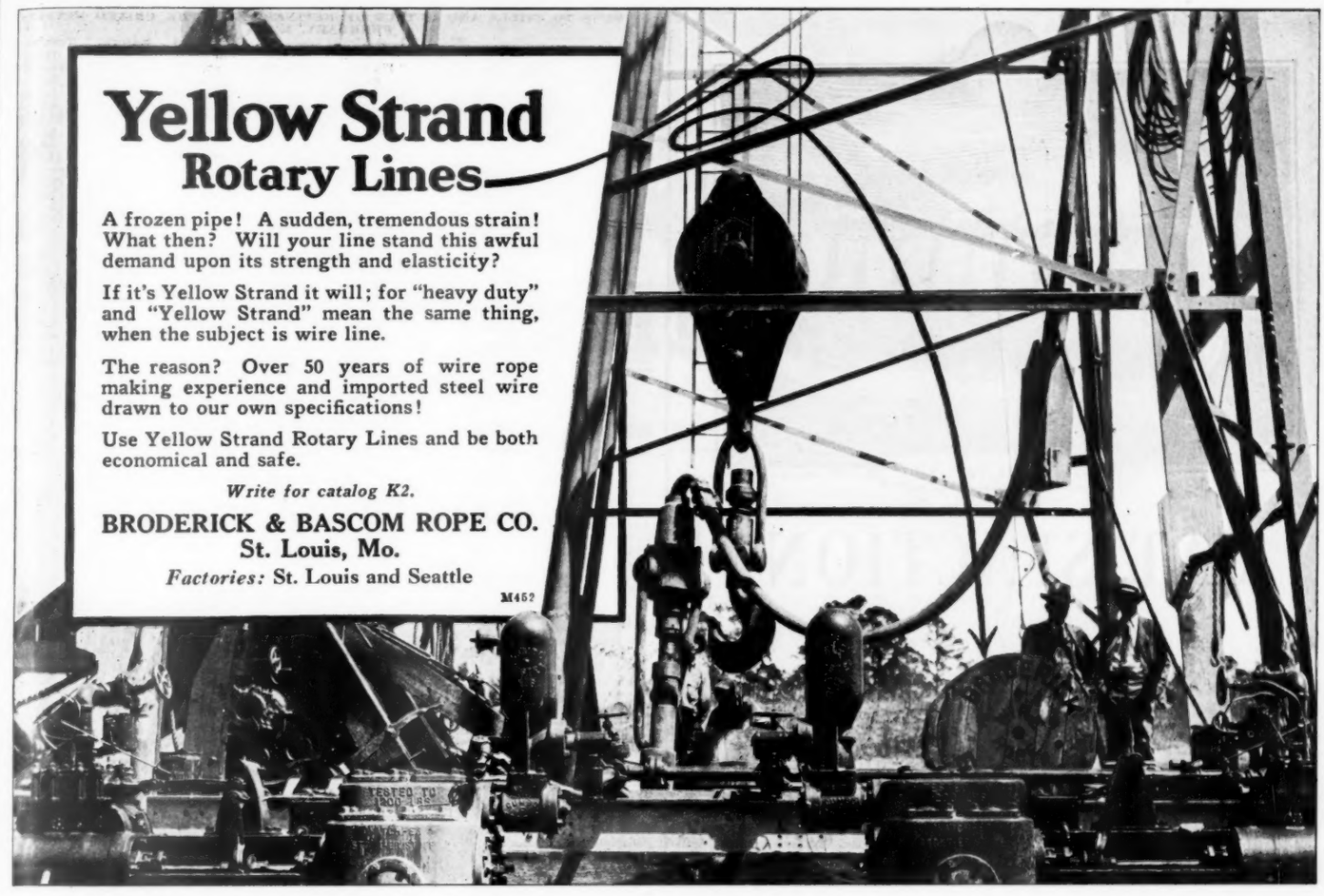
Use Yellow Strand Rotary Lines and be both economical and safe.

*Write for catalog K2.*

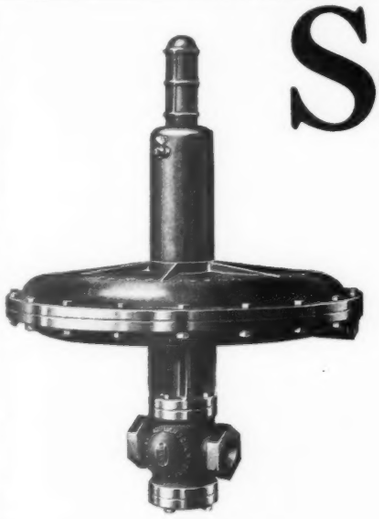
**BRODERICK & BASCOM ROPE CO.**
**St. Louis, Mo.**

*Factories:* St. Louis and Seattle

M462



# STOP SUMMER VAPOR LOSSES
## with
## Neilan *Vapor Recovery* Regulators



Prevent your storage tanks from breathing away thousands of gallons of rich gasoline in the saturated vapors, in the scorching summer sun. You can do this easily by equipping your tanks with supersensitive Neilan Vapor Recovery Regulators.

These regulators provide a means of saving these rich vapors by drawing them off through a vacuum line. At the same time they prevent pressure or vacuum from ever becoming excessive so as to injure the tanks. They operate positively on a fraction of an inch of water because, due to their careful construction and non-corrosive parts, they are practically frictionless.

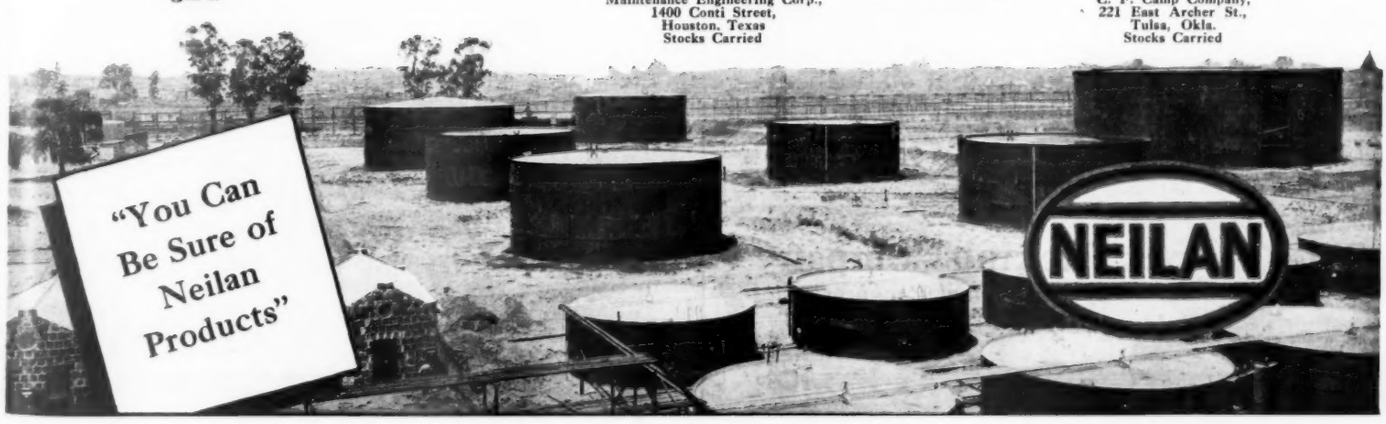
The small original cost is saved in a very short time, after which they earn a daily profit for you. Start this summer's successful campaign against vapor losses to-day, by sending for the descriptive bulletin about Neilan Vapor Recovery Regulators.

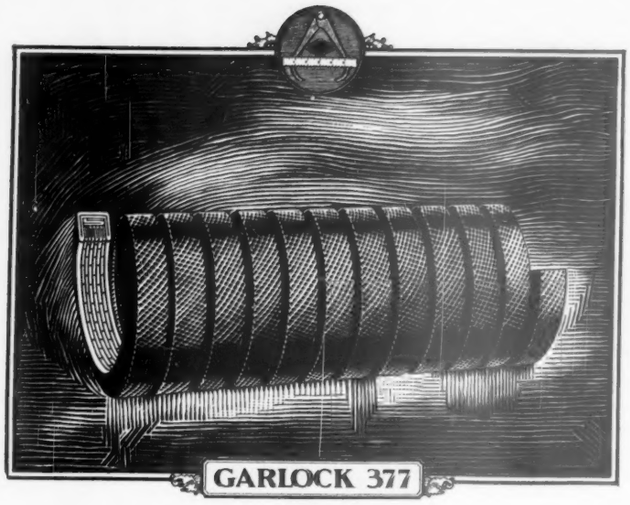
**NEILAN, SCHUMACHER & CO.**
641-651 Santa Fe Avenue, Los Angeles, California

REPRESENTATIVES:

Maintenance Engineering Corp.,
1400 Conti Street,
Houston, Texas
Stocks Carried

C. F. Camp Company,
221 East Archer St.,
Tulsa, Okla.
Stocks Carried






# SATISFACTION

*This factor is built into every product of The Garlock Packing Company*

**Service** Garlock-377 is a lubricated non-friction metal packing with side walls, back and cushion of frictioned asbestos cloth. It will give complete satisfaction on any packing installation requiring a Mechanical Packing of this type.

It is a general all around steam engine packing and especially recommended for piston rods of main engines, deck engines and hoisting engines of steamships, as well as kickers and steam niggers as used in the lumber trade. Excellent service has been obtained from installations made on steam shovels, dredges and steam hammers.

**Construction** The special design of Garlock-377 gives it extreme flexibility, thus enabling it to closely encircle the rod. The asbestos side walls and back hold the metal in place and the folded asbestos core above the metal acts as a pusher and compensating cushion to bring the metal to the rod at an even pressure. The ratio of wear on the bearing surface of the packing is the same at all times on account of the square construction of the metal core.

**The Garlock Packing Company**
*Manufacturers of Mechanical Packings*
Palmyra, N. Y., U.S.A.

### RUNS TO STILLS AND OUTPUT OF REFINERIES IN THE UNITED STATES FEBRUARY, 1929

| Input | Crude oil: domestic | Crude oil: foreign | Unfinished oils rerun | Natural gasoline | Total input (bbls.) |
|---|---|---|---|---|---|
| East Coast | 7,469,000 | 5,319,000 | 915,000 | 340,000 | 14,033,000 |
| Appalachian | 2,417,000 | ..... | 156,000 | 61,000 | 2,634,000 |
| Ind., Ill., Ky., etc. | 7,754,000 | ..... | 731,000 | 143,000 | 8,628,000 |
| Okla., Kans., etc. | 8,101,000 | ..... | 494,000 | 254,000 | 8,849,000 |
| Texas | 15,831,000 | 37,000 | 1,099,000 | 671,000 | 17,638,000 |
| Louisiana and Arkansas | 5,413,000 | 723,000 | 6,000 | 438,000 | 6,580,000 |
| Rocky Mountain | 1,881,000 | ..... | 526,000 | 105,000 | 2,512,000 |
| California | 17,096,000 | ..... | *483,000 | †1,014,000 | 18,593,000 |
| U. S. Total | 65,952,000 | 6,079,000 | 4,410,000 | 3,026,000 | 79,467,000 |
| Daily av., Feb., 1929 | 2,355,400 | 217,100 | 157,500 | 108,100 | 2,838,100 |
| Daily av., Jan., 1929 | 2,336,500 | 207,300 | 142,900 | 104,200 | 2,789,900 |
| Texas Gulf Coast | 11,613,000 | 37,300 | 1,006,000 | 570,000 | 13,226,000 |
| Louisiana Gulf Coast | 3,539,000 | 723,000 | ..... | 343,000 | 4,605,000 |

| Output | Gasoline (bbls.) | Kerosene (bbls.) | Gas oil and fuel oil (bbls.) | Lubricants (bbls.) | Wax (lbs.) |
|---|---|---|---|---|---|
| East Coast | 4,291,000 | 581,000 | 7,255,000 | 771,000 | 18,072,000 |
| Appalachian | 1,178,000 | 255,000 | 536,000 | 367,000 | 7,089,000 |
| Ind., Ill., Ky., etc. | 4,594,000 | 368,000 | 2,750,000 | 267,000 | 5,642,000 |
| Okla., Kans., etc. | 4,533,000 | 700,000 | 2,774,000 | 196,000 | 3,895,000 |
| Texas | 7,208,000 | 1,235,000 | 7,333,000 | 610,000 | 6,574,000 |
| Louisiana and Arkansas | 2,270,000 | 385,000 | 2,945,000 | 75,000 | 4,624,000 |
| Rocky Mountain | 1,215,000 | 72,000 | 440,000 | 49,000 | 4,131,000 |
| California | 5,975,000 | 839,000 | 10,298,000 | 168,000 | ..... |
| U. S. total | 31,264,000 | 4,435,000 | 34,331,000 | 2,503,000 | 50,027,000 |
| Daily av., Feb., 1929 | 1,116,600 | 158,400 | 1,226,100 | 89,400 | 1,786,700 |
| Daily av., Jan., 1929 | 1,107,600 | 151,600 | 1,188,300 | 95,000 | 1,899,500 |
| Texas Gulf Coast | 5,641,000 | 1,005,000 | 5,154,000 | 582,000 | 6,314,000 |
| Louisiana Gulf Coast | 1,747,000 | 343,000 | 1,762,000 | 69,000 | 4,624,000 |

| Output (continued) | Coke (tons) | Asphalt (tons) | Other finished products (bbls.) | Unfinished products (bbls.) | Losses (bbls.) |
|---|---|---|---|---|---|
| East Coast | 9,700 | 92,400 | 60,000 | 68,000 | 390,000 |
| Appalachian | 4,000 | ..... | 24,000 | 74,000 | 153,000 |
| Ind., Ill., Ky., etc. | 28,200 | 33,500 | 163,000 | 24,000 | 114,000 |
| Okla., Kans., etc. | 30,600 | 1,200 | 66,000 | 33,000 | 353,000 |
| Texas | 34,300 | 10,900 | 4,000 | 446,000 | 554,000 |
| Louisiana and Arkansas | 10,700 | 25,600 | 141,000 | 410,000 | 148,000 |
| Rocky Mountain | 9,200 | 200 | 12,000 | 620,000 | 28,000 |
| California | ..... | 44,400 | 147,000 | *598,000 | 319,000 |
| U. S. total | 126,700 | 208,200 | 617,000 | 2,273,000 | 2,059,000 |
| Daily av., Feb., 1929 | 4,530 | 7,440 | 22,000 | 81,200 | 73,500 |
| Daily av., Jan., 1929 | 4,450 | 6,080 | 21,300 | 81,100 | 82,000 |
| Texas Gulf Coast | 29,300 | 10,900 | 1,000 | 215,000 | 407,000 |
| Louisiana Gulf Coast | 10,700 | 23,200 | 135,000 | 281,000 | 73,000 |

Note—Wax, coke and asphalt equivalent to 276.4 pounds per barrel and 5.20 and 5.50 bbls. per ton, respectively.

*Includes 164,000 bbls. net tops produced. †Includes 92,000 bbls. natural gasoline run through pipe lines.

### STOCKS HELD BY THE REFINING COMPANIES IN THE UNITED STATES, FEBRUARY 28, 1929

| | Gasoline (bbls.) | Kerosene (bbls.) | Gas oil and fuel oil (bbls.) | Lubricants (bbls.) |
|---|---|---|---|---|
| East Coast | 7,209,000 | 1,077,000 | 4,667,000 | 2,598,000 |
| Appalachian | 1,870,000 | 295,000 | 1,071,000 | 1,241,000 |
| Ind., Ill., Ky., etc. | 8,124,000 | 679,000 | 1,989,000 | 803,000 |
| Okla., Kans., etc. | 5,743,000 | 649,000 | 4,541,000 | 570,000 |
| Texas | 7,011,000 | 1,551,000 | 11,312,000 | 2,058,000 |
| Louisiana and Arkansas | 3,061,000 | 642,000 | 5,500,000 | 111,000 |
| Rocky Mountain | 2,500,000 | 344,000 | 1,038,000 | 197,000 |
| California | 10,186,000 | 2,973,000 | ..... | 956,000 |
| U. S. total | 45,704,000 | 8,210,000 | *30,118,000 | 8,534,000 |
| U. S. total 1/31/29 | 40,648,000 | 8,865,000 | *32,522,000 | 8,649,000 |
| Texas Gulf Coast | 6,051,000 | 1,466,000 | 8,583,000 | 1,993,000 |
| Louisiana Gulf Coast | 2,761,000 | 617,000 | 4,491,000 | 108,000 |

| | Wax (lbs.) | Coke (tons) | Asphalt (tons) | Other finished products (bbls.) | Unfinished oils (bbls.) |
|---|---|---|---|---|---|
| East Coast | 57,250,000 | 23,500 | 91,700 | 39,000 | 8,040,000 |
| Appalachian | 15,406,000 | 2,800 | ..... | 70,000 | 1,339,000 |
| Ind., Ill., Ky., etc. | 16,012,000 | 24,500 | 46,400 | 185,000 | 3,933,000 |
| Okla., Kans., etc. | 6,956,000 | 72,500 | 2,300 | 47,000 | 2,328,000 |
| Texas | 7,634,000 | 134,800 | 10,000 | 13,000 | 10,218,000 |
| Louisiana and Arkansas | 15,980,000 | 55,100 | 28,100 | 78,000 | 2,327,000 |
| Rocky Mountain | 20,815,000 | 74,900 | 5,500 | 37,000 | 1,453,000 |
| California | ..... | ..... | 51,600 | 183,000 | †8,532,000 |
| U. S. total | 140,053,000 | 388,100 | 235,600 | 652,000 | 38,170,000 |
| U. S. total 1/31/29 | 123,521,000 | 403,800 | 229,100 | 653,000 | ‡38,564,000 |
| Texas Gulf Coast | 7,400,000 | 128,500 | 9,900 | 8,000 | 8,482,000 |
| Louisiana Gulf Coast | 16,980,000 | 55,100 | 24,700 | 73,000 | 1,991,000 |

*East of California. †Includes 1,568,000 bbls. tops in storage. ‡Revised by addition of 300,000 bbls. to East Coast district.

### IMPORTS AND EXPORTS OF CRUDE PETROLEUM (Barrels)

(From Bureau of Foreign and Domestic Commerce)

| | February, 1929: Total | February, 1929: Dy.av. | January, 1929: Total | January, 1929: Dy.av. | Jan.-Feb. 1929 | Jan.-Feb. 1928 |
|---|---|---|---|---|---|---|
| Imports | 7,016,000 | 250,600 | 8,075,000 | 260,500 | 15,091,000 | 12,181,000 |
| From Mexico | 529,000 | 18,900 | 784,000 | 25,300 | 1,313,000 | 2,173,000 |
| From Venezuela | 4,791,000 | 171,100 | 5,622,000 | 181,400 | 10,413,000 | 6,857,000 |
| From Colombia | 1,378,000 | 49,200 | 1,272,000 | 41,000 | 2,650,000 | 2,640,000 |
| From other countries | 318,000 | 11,400 | 397,000 | 12,800 | 715,000 | 511,000 |
| Exports:* | 1,678,000 | 59,900 | 1,972,000 | 63,600 | 3,650,000 | 2,469,000 |
| Domestic crude oil: | | | | | | |
| To Canada | 1,354,000 | 48,300 | 1,507,000 | 48,600 | 2,861,000 | 1,863,000 |
| To other countries | 324,000 | 11,600 | 465,000 | 15,000 | 789,000 | 606,000 |
| Foreign crude oil | ..... | ..... | ..... | ..... | ..... | ..... |

*No crude shipments to territories.

### INDICATED DELIVERIES OF CRUDE PETROLEUM, EXCLUSIVE OF CALIFORNIA GRADES, TO DOMESTIC CONSUMERS (Barrels)

| Domestic petroleum by fields of origin: | February, 1929: Total | February, 1929: Dy.av. | January, 1929: Total | January, 1929: Dy.av. | Jan.-Feb. 1929 | Jan.-Feb. 1928 |
|---|---|---|---|---|---|---|
| Appalachian | 2,390,000 | 85,400 | 2,606,000 | 84,100 | 4,996,000 | 4,842,000 |
| Lima-Indiana | 129,000 | 4,600 | 155,000 | 5,000 | 284,000 | 237,000 |
| Michigan | 130,000 | 4,600 | 159,000 | 5,100 | 289,000 | 61,000 |
| Ill. & S. W. Ind. | 592,000 | 21,200 | 644,000 | 20,800 | 1,236,000 | 1,302,000 |
| Mid-Continent | 42,120,000 | 1,504,300 | 46,230,000 | 1,491,300 | 88,350,000 | 77,393,000 |
| Gulf Coast | 4,064,000 | 145,100 | 3,989,000 | 128,700 | 8,053,000 | 7,347,000 |
| Rocky Mountain | 2,080,000 | 74,300 | 2,394,000 | 77,200 | 4,474,000 | 4,651,000 |
| Deliveries and exports | 51,505,000 | 1,839,500 | 56,177,000 | 1,812,200 | 107,682,000 | 95,833,000 |
| Deliveries | 50,603,000 | 1,807,200 | 54,909,000 | 1,771,300 | 105,512,000 | 94,346,000 |
| Foreign petroleum | 6,949,000 | 248,200 | 7,998,000 | 258,000 | 14,947,000 | 12,208,000 |
| Deliveries of domestic and foreign petroleum | 57,552,000 | 2,055,400 | 62,907,000 | 2,029,300 | 120,459,000 | 106,554,000 |

(Continued on next page)

# American Hammered Piston Rings

*Individually cast, mechanically hammered to give lasting tension, particularly designed and adapted for Oil Field and other severe service.*

*Endorsed and used as Factory Equipment by---*

| | |
|---|---|
| Ajax Iron Works | Corry, Pa. |
| Bruce-Macbeth Eng. Co. | Cleveland, Ohio |
| Bovaird & Seyfang Mfg. Co. | Bradford, Pa. |
| Bradford Supply Co. | Bradford, Pa. |
| C. & G. Cooper Co. | Mount Vernon, Ohio |
| Chicago Pneumatic Tool Co. | New York, N. Y. |
| De La Vergne Machine Co. | Philadelphia, Pa. |
| Franklin Valveless Eng. Co. | Franklin, Pa. |
| Ingersoll-Rand Co. | New York, N. Y. |
| McIntosh & Seymour Corp. | Auburn, N. Y. |
| Muncie Oil Engine Co. | Muncie, Ind. |
| National Supply Co. | Toledo, Ohio |
| Pennsylvania Pump & Compressor Co. | Easton, Pa. |
| Power Mfg. Co. | Marion, Ohio |
| Jos. Reid Gas Eng. Co. | Oil City, Pa. |
| Sullivan Machinery Co. | Michigan City, Ind. |
| Titusville Iron Works | Titusville, Pa. |
| Wilson Snyder Mfg. Co. | Pittsburgh, Pa. |
| Worthington Pump & Mach. Corp. | New York, N. Y. |

*May be obtained from the above companies, or their selling agents, in standard sizes or oversizes.*

*Rings for any engine or compressor not listed above can be obtained direct from us.*

The American Hammered Piston Ring Co. Baltimore, Md.

# Gasoline cannot Leak Past

## *joints sealed with*

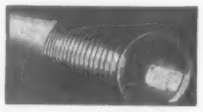
## G. & B. Pipe Sealing Compound

**There need not be any slow, steady leakage of gasoline and profits from these joints in your pump bases. Those joints that are hard to make tight can be made tight with Gilbert & Barker Pipe Sealing Compound. Because gasoline cannot leak past this insoluble Compound.**

**Joints sealed with it begin leak-proof and stay leak-proof. Small leaks never start, so large leaks never occur.**

**In your next gasoline pump installation, see to it that G. & B. Compound is used on all joints. Then you'll have a leakless pipe line—one that will never give trouble.**

**G. & B. Pipe Sealing Compound comes in cans of three sizes: ⅛ pint for 15¢, a handy size for the tool kit; pint for 75¢, a good size for general shop use; and a quart for $1.45, the size to keep on hand for supply.**



Make certain that all threads are clean. Spread G. & B. Sealing Compound on the male threads *only*. Make the joint up tight, and you'll have a tight joint permanently.

**GILBERT AND BARKER MANUFACTURING COMPANY**

PUMPS AND TANKS FOR THE OIL TRADE

SPRINGFIELD, MASS.

*Visible Gasoline Pumps, mechanical measure or sight measure, hand or air operated, equipped with the famous* NULTRA *bowls. Also piston type pumps with visible discharge. Pump and tank outfits for motor oils, including the popular* "NARRO-LUBE" *type. Special pipe sealing compound for gasoline and oil pump and tank installations.*


### COMPARATIVE ANALYSES

(Thousands of barrels of 42 U. S. gallons)

| | Runs to stills | | *Imports | | *Exports | | Stocks end | Dom. demand | |
|---|---|---|---|---|---|---|---|---|---|
| Crude petroleum: | Total | Dy.av. | Total | Dy.av. | Total | Dy.av | of period | Total | Dy.av. |
| February, 1929 | 72,031 | 2,573 | 7,016 | 251 | 1,678 | 60 | †398,749 | ..... | .... |
| January, 1929 | 78,825 | 2,543 | 8,075 | 260 | 1,972 | 64 | †392,259 | ..... | .... |
| Jan.-Feb., 1929 | 150,856 | 2,557 | 15,091 | 256 | 3,650 | 62 | †398,749 | ..... | .... |
| February, 1928 | 66,625 | 2,297 | 6,036 | 208 | 1,243 | 43 | †383,917 | ..... | .... |
| Jan.-Feb., 1928 | 135,692 | 2,262 | 12,181 | 203 | 2,475 | 41 | †383,917 | ..... | .... |
| Gasoline: | Production | | | | | | | | |
| February, 1929 | 31,264 | 1,117 | 406 | 15 | 3,838 | 137 | 45,704 | 22,776 | 813 |
| January, 1929 | 34,335 | 1,108 | 499 | 16 | 4,650 | 150 | 40,648 | 22,602 | 729 |
| Jan.-Feb., 1929 | 65,599 | 1,112 | 905 | 15 | 8,488 | 144 | 45,704 | 45,378 | 769 |
| February, 1928 | 26,856 | 926 | 372 | 13 | 3,341 | 115 | 39,853 | 21,402 | 738 |
| Jan.-Feb., 1928 | 54,837 | 914 | 934 | 16 | 7,054 | 118 | 39,853 | 42,180 | 702 |
| Kerosene: | | | | | | | | | |
| February, 1929 | 4,435 | 158 | 20 | 1 | 1,591 | 57 | 8,210 | 3,519 | 126 |
| January, 1929 | 4,700 | 152 | 38 | 1 | 1,918 | 62 | 8,865 | 2,956 | 95 |
| Jan.-Feb., 1929 | 9,135 | 155 | 58 | 1 | 3,509 | 59 | 8,210 | 6,475 | 110 |
| February, 1928 | 4,749 | 164 | 11 | .. | 1,551 | 54 | 7,613 | 3,266 | 113 |
| Jan.-Feb., 1928 | 9,807 | 163 | 57 | 1 | 3,901 | 65 | 7,613 | 6,065 | 101 |
| Gas oil and fuel oil: | | | | | | | | | |
| February, 1929 | 34,331 | 1,226 | 466 | 17 | 2,795 | 100 | ‡129,402 | ..... | .... |
| January, 1929 | 36,838 | 1,188 | 335 | 11 | 3,699 | 119 | ‡‖131,204 | ..... | .... |
| Jan.-Feb., 1929 | 71,169 | 1,206 | 801 | 14 | 6,494 | 110 | ‡129,402 | ..... | .... |
| February, 1928 | 31,897 | 1,100 | 666 | 23 | 3,420 | 118 | ‡124,357 | ..... | .... |
| Jan.-Feb., 1928 | 64,910 | 1,082 | 1,219 | 20 | 7,595 | 127 | ‡124,357 | ..... | .... |
| Lubricants: | | | | | | | | | |
| February, 1929 | 2,503 | 89 | 1 | .. | 871 | 31 | 8,534 | 1,751 | 62 |
| January, 1929 | 2,945 | 95 | 1 | .. | 1,116 | 36 | 8,649 | 1,521 | 49 |
| Jan.-Feb., 1929 | 5,448 | 92 | 2 | .. | 1,987 | 34 | 8,534 | 3,272 | 55 |
| February, 1928 | 2,728 | 94 | .. | .. | 841 | 29 | 8,332 | 1,543 | 53 |
| Jan.-Feb., 1928 | 5,382 | 90 | .. | .. | 1,775 | 30 | 8,332 | 3,135 | 52 |
| Wax (thous. of pounds) | | | | | | | | | |
| February, 1929 | 50,027 | 1,787 | 3,120 | 111 | 25,359 | 906 | 140,053 | 11,256 | 402 |
| January, 1929 | 58,885 | 1,900 | 2,982 | 96 | 28,065 | 905 | 123,521 | 20,625 | 665 |
| Jan.-Feb., 1929 | 108,912 | 1,846 | 6,102 | 103 | 53,424 | 905 | 140,053 | 31,881 | 540 |
| February, 1928 | 49,158 | 1,695 | 1,337 | 46 | 38,036 | 1,312 | 136,479 | 25,705 | 886 |
| Jan.-Feb., 1928 | 104,536 | 1,742 | 2,454 | 41 | 77,718 | 1,296 | 136,479 | 43,401 | 723 |

*From Bureau of Foreign and Domestic Commerce, subject to revision. Exports include shipments to Alaska, Hawaii, and Porto Rico. †Includes California light crude. ‡Includes California heavy crude and fuel oil. ‖Revised.

### ANALYSIS OF SUPPLY AND DEMAND OF ALL OILS

(Including wax, coke and asphalt in thousands of barrels of 42 U. S. gallons)

| | February, 1929 | January, 1929* | February, 1928 | Jan.-Feb., 1929 | Jan.-Feb., 1928 |
|---|---|---|---|---|---|
| Domestic production: | | | | | |
| Crude petroleum: | | | | | |
| Light | 69,193 | 74,812 | 60,488 | 144,005 | 125,146 |
| Heavy | 6,500 | 7,167 | 7,983 | 13,667 | 16,038 |
| Total crude | 75,693 | 81,979 | 68,471 | 157,672 | 141,184 |
| Natural gasoline | 3,729 | 3,983 | 3,324 | 7,712 | 6,729 |
| Benzol | 233 | 250 | 217 | 483 | 443 |
| Total production | 79,655 | 86,212 | 72,012 | 165,867 | 148,356 |
| Daily average | 2,845 | 2,781 | 2,483 | 2,811 | 2,473 |
| Imports: | | | | | |
| Crude | 7,016 | 8,075 | 6,036 | 15,091 | 12,181 |
| Refined | 908 | 884 | 1,054 | 1,792 | 2,219 |
| Total new supply all oils | 87,579 | 95,171 | 79,102 | 182,750 | 162,756 |
| Daily average | 3,128 | 3,070 | 2,728 | 3,097 | 2,713 |
| Change in stocks all oils | 8,864 | 11,716 | 7,028 | 20,580 | 17,367 |
| DEMAND: | | | | | |
| Total demand | 78,715 | 83,455 | 72,074 | 162,170 | 145,389 |
| Daily average | 2,811 | 2,692 | 2,485 | 2,749 | 2,423 |
| Exports: | | | | | |
| Crude | 1,678 | 1,972 | 1,243 | 3,650 | 2,475 |
| Refined | 9,506 | 11,714 | 9,578 | 21,220 | 21,312 |
| Domestic demand | 67,531 | 69,769 | 61,253 | 137,300 | 121,602 |
| Daily average | 2,412 | 2,251 | 2,112 | 2,327 | 2,027 |
| Excess of daily average domestic production over domestic demand | 433 | 531 | 371 | 484 | 446 |
| STOCKS (end of month): | | | | | |
| Crude petroleum: | | | | | |
| East of California— | | | | | |
| Light | 325,766 | 322,749 | 313,085 | 325,766 | 313,085 |
| Heavy | 51,173 | 50,164 | 50,722 | 51,173 | 50,722 |
| California: | | | | | |
| Light | 21,810 | 19,196 | 20,110 | 21,810 | 20,110 |
| Heavy | 99,284 | 98,682 | 94,797 | 99,284 | 94,797 |
| Total crude | 498,033 | 490,791 | 478,714 | 498,033 | 478,714 |
| Natural gasoline at plants | 821 | 741 | 824 | 821 | 824 |
| Refined products | 135,209 | 133,667 | 127,436 | 135,209 | 127,436 |
| GRAND TOTAL STOCKS all oils | 634,063 | 625,199 | 606,974 | 634,063 | 606,974 |
| Days' supply | 226 | 232 | 244 | 231 | 251 |
| Bunker oil (included above in domestic demand) | 4,252 | 3,915 | 3,751 | 8,167 | 7,531 |

*Revised.

### NUMBER OF PRODUCING OIL WELLS COMPLETED*

| | | | |
|---|---|---|---|
| February, 1929 | 1,086 | January-February, 1929 | 2,291 |
| January, 1929 | 1,205 | January-February, 1928 | 1,600 |

*For states east of California, from The Oil and Gas Journal; for California, from the American Petroleum Institute.

### SHIPMENTS OF CALIFORNIA OIL THROUGH PANAMA CANAL TO EASTERN PORTS IN UNITED STATES (Barrels)

| | February 1929 | January 1929 | Jan.-Feb. 1929 | Jan-Feb. 1928 |
|---|---|---|---|---|
| Crude oil | 241,000 | ..... | 241,000 | 649,000 |
| Refined products | 2,091,000 | 2,162,000 | 4,253,000 | 2,556,000 |
| Gasoline | 1,735,000 | 1,823,000 | 3,558,000 | 1,982,000 |
| Gas oil | 343,000 | 334,000 | 677,000 | 404,000 |
| Fuel oil | 8,000 | ..... | 8,000 | 81,000 |
| Lubricants | 2,000 | 2,000 | 4,000 | 86,000 |
| Asphalt | 3,000 | 3,000 | 6,000 | 3,000 |

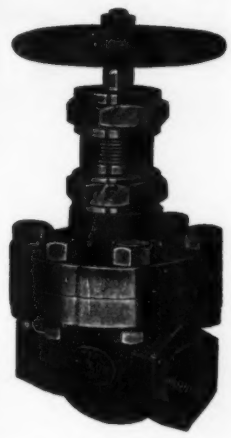
### GERMANY SPURS OIL RESEARCH

Responsible German oil operators are at present planning to form a cartel primarily to eliminate certain small speculative enterprises based on the hope of better oil recovery in Hanover. The proposed plans include a more intensive scientific development of Germany's potential oil-reserves, expectations being particularly encouraged by the success which attended deeper penetration in the Obershagen-Nienhagen district. This consideration, and the desire to relieve the country as far as possible from its present necessity to import oil heavily, are probably at the base of the plan, interest in which is now being promoted by a commission appointed for that purpose in October by representatives of the German oil industry.

### THOMAS DISTRICT MANAGER

Morvin Thomas, well known among oil men of Oklahoma, Texas and Kansas fields, has been made district manager of sales for the Pittsburgh Steel Products Co., Pittsburgh, Pa., with his headquarters in the Shell Building, St. Louis, Mo. For the past four years Mr. Thomas was sales manager for the Southwest Supply Co., with an office in Bartlesville, Okla., and during the six years preceding that he was district manager for the Interstate Pipe Co., with an office in Tulsa.

# LUDLOW VALVES



IRON BODY
BRONZE MOUNTED

ALL IRON
CAST STEEL

ALL SIZES AND PRESSURES

FOR REFINERY PIPE LINE DRILLING & HAND CYLINDER ELECTRICAL OPERATED

*DISTRIBUTED BY*

MID-CONTINENT SUPPLY CO.
HOUSTON, TEX. FORT WORTH, TEX.

PEDEN IRON & STEEL CO.
SHREVEPORT, LA.

CATALOG ON REQUEST

THE LUDLOW VALVE MFG. CO.
TROY, NEW YORK

KANSAS CITY CHICAGO BOSTON PITTSBURG

TRADE LUDLOW MARK

## "THE CHIEF SUPER-HEATER"

*Built in 3 sizes—250, 500 and 1000 Gal.*

NO WAITING ON THE JOB!

*QUICK FIRE*

American Heaters are built for heavy use—for immediate firing. Men sitting on the job mean losses. It's better to have the best—and a whole lot SAFER. Get the FACTS on "The Chief."

*Write for Catalog and Prices*

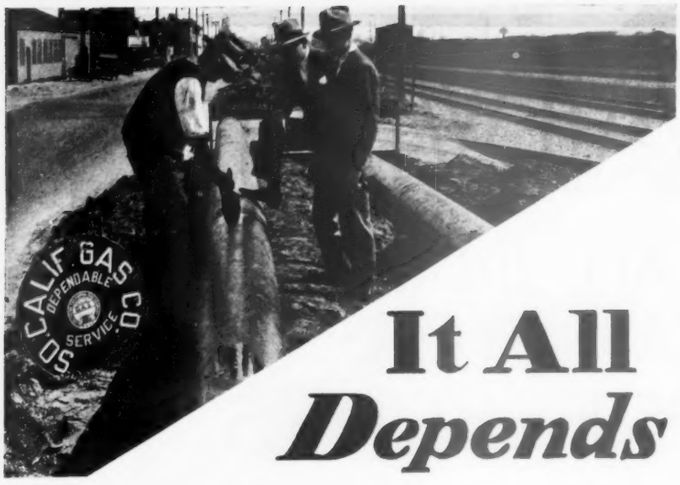
AMERICAN STEEL WORKS
Kansas City, Missouri

## STANDARD OIL ISSUES

CARL H. PFORZHEIMER & CO.

*(Specialists in Standard Oil and Miscellaneous Oil Securities)*

25 Broad Street New York, N. Y.




# It All *Depends*

How much protection do your pipe-lines need? That depends on where you put them—the type of soil they must encounter. And the surest way to determine this is by a survey and some analyses of the soil itself.

For example, on the job pictured above—a 16 inch main of the Southern California Gas Company—a survey showed that corrosive elements in the soil were negligible. Only three coatings were needed—a penetration and two electrolysis-proof. It would be unnecessary to apply the full amount of protection here—a needless waste of money.

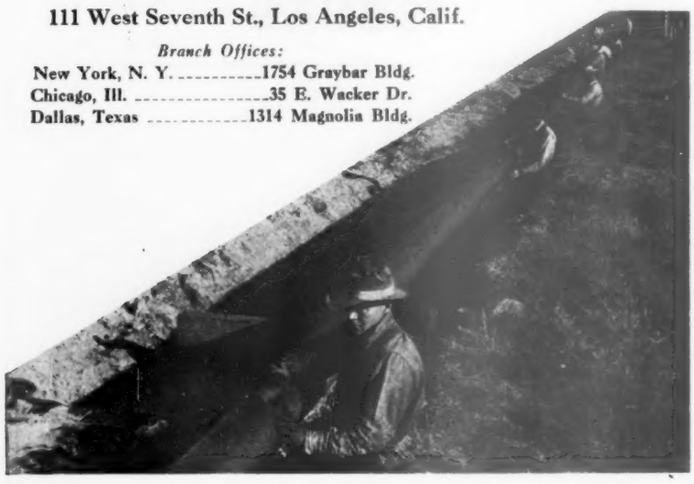
But a similar survey on the job below showed just the opposite conditions—severely corrosive soil with strong electrolytic action. Here the Industrial Fuel and Supply Company applied the maximum protection.

Fit the protection to meet the need! This is the principle of the McEverlast plan of pipe-line protection. By giving just the protection necessary, *where* it's necessary, McEverlast cuts costs right down to the bone—so successfully that many of the largest industrials in the southwest are using it exclusively. A request will bring you our new booklet . . . "Protecting Pipe-Lines and Exposed Metal Surfaces with McEverlast Protective Coatings".

McEVERLAST, INC.
[THREE]

111 West Seventh St., Los Angeles, Calif.

*Branch Offices:*
New York, N. Y. ----------1754 Graybar Bldg.
Chicago, Ill. ----------35 E. Wacker Dr.
Dallas, Texas ----------1314 Magnolia Bldg.



# NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

## TEXAS PANHANDLE

### Carson County

Empire Gas & Fuel Co.'s No. 1 V. B. Armstrong, 330 feet north and west of the SE cor. of the NW of the SE of Section 31, Block B-2, T.T.R.R. Survey. Same company's No. 15 S. B. Burnett estate, at the C of the NW of Section 4, Block 5, I.&G.N. Survey. The Texas Company's No. 1 J. K. Quinn, 330 feet north and east of the SW cor. of the SE of Section 7, Block 9, H.&G.N. Survey.

### Gray County

Scott Drilling Co. and others' No. 1 A. Chapman, 330 feet north and east of the SW cor. of the S half of the NE of Section 69, Block 25, H.&G.N. Survey. The Texas Company's No. 5 S. W. McLarty and others-A, 330 feet south and east of the NW cor. of Section 2, Block 1, A.C.H.&B. Survey. Champlin Refining Co.'s No. 1 D. J. McLaughlin, 330 feet south and west of the NE cor. of Section 33, Block B-2, H.&G.N. Survey. E. Harrell's No. 1 J. C. McConnell, 330 feet south and west of the NE cor. of the E half of the SE of Section 187, Block 3, H.&G.N. Survey.

Marland Production Co.'s No. 2 M. K. Brown (Finley), 330 feet north and west of the SE cor. of Section 32, Block B-2, H.&G.N. Survey. Operators Oil Co.'s No. 1 S. Faulkner, 330 feet north and east of the SW cor. of the west 60 acres of Section 30, Block B-2, H.&G.N. Survey. Phillips Petroleum Co.'s No. 1 J. H. Palmer, 330 feet north and west of the SE cor. of Section 31, Block B-2, H.&G.N. Survey. Sun Oil Co.'s No. 1 Purviance and others, 330 feet south and west of the NE cor. of the west 80 acres of Section 61, Block B-2, H.&G.N. Survey. The Texas Company's No. 2 S. Faulkner, 330 feet north and east of the SW cor. of Section 29, Block B-2, H.& G.N. Survey. Same company's No. 1 Purviance and others, 330 feet south and east of the NW cor. of the east 155 acres of the west 235 acres of Section 61, Block B-2, H.&G.N. Survey.

### Hutchinson County

Gulf Production Co.'s No. 44 C. L. Dial and others, 330 feet north and 325 feet west of the NE cor. of the W. S. Christian Survey No. 31-A, Block V, A-1,-232 and located in Section 36, Block M-23, T.C.R.R. Survey. Same company's No. 45 C. L. Dial and others, 660 feet south and 660 feet west of the NE cor. of the S half of Section 25, Block 47, H.&T.C. Survey.

### Motley County

Matador Oil Corp.'s No. 1 J. W. Owens, at the C of the NE of Section 10, Block G, B.&B. Survey.

### Wheeler County

Lone Star Gas Co.'s No. 1 R. W. Griswold, at the C of the NE of the SE of Section 1, Block 24, H.&G.N. Survey. Mudge Oil Co.'s No. 2 C. Hicks, at the C of the SE of the NW of Section 52, Block 17, H.&G.N. Survey.

### Archer County

Gulf Production Co.'s No. 3 H. L. Ward and others-C, 450 feet north and 150 feet west of the SE cor. of the Joseph Tomlinson Survey, A-452. Brown & United Producers Co.'s No. 1 W. H. Taylor, 150 feet north and east of the SW cor. of the N half of Lot 11, Section 17, A.T.N.C.L. Survey. P. F. Gwynn and others No. 1 A. D. Thompson, 150 feet south and east of the NW cor. of Lot 16, Section 20, A.T.N.C.L. Survey.

H. Hines' No. 2 Mrs. Anna B. Wallace, 150 feet north and 991 feet west of the SE cor. of Section 2, Denton County School Land, League 3, A-117. Johnson & Fraser's No. 1 Mrs. Anna B. Wallace, 150 feet south and west of the NE cor. of the east 20 acres of the west 40 acres of the north 70 acres of Section 11, Denton County School Land, League 3, A-117. Magnolia Petroleum Co.'s No. 10 May Rutty-B, 150 feet north and 750 feet west of the SE cor. of the NE of the May Rutty 160-acre tract out of the J. T. O'Reilly Survey No. 24, A-360.

Pandem Oil Corp.'s No. 2 Mrs. Anna B. Wallace, 150 feet south and 450 feet east of the NW cor. of the east 30 acres of the north 70 acres of Section 11, Denton County School Land, League 3, A-117. F. P. Cullum and others' No. 1 Falls County School Land, 150 feet north and 475 feet east of the SW cor. of Section 9, Falls County School Land, A-130. L. Franklin's No. 1 R. D. Andrews, 150 feet south and east of the NW cor. of the southwest 20 acres (square) of Section 1,807, T.E.&L. Survey. Humble Oil & Refining Co.'s No. 1 Falls County School Land, 250 feet south and 1,100 feet east of the NW cor. of Section 31, Falls County School Land, A-130. A. P. Nicholson and others' No. 1 T. L. Hudson-B, 150 feet north and west of the SE cor. of the south 80 acres of the T. L. Hudson 160-acre tract out of the Thomas Toby Survey, A-644.

Prairie Oil & Gas Co.'s No. 1 J. T. Richardson (Section 13), 150 feet north and east of the SW cor. of Section 13, Thomas McCoy Survey, A-269. Shell Petroleum Corp.'s No. 4 Abercrombie & Taylor-C, 450 feet south and 490 feet west of the NE cor. of the SW of Section 41, Club Ranch Subdivision. Texas Unity Oil Co.'s No. 1 A. M. Kunkel, 150 feet south and west of the NE cor. of the NE of the SE of Section 3, B.B.B. &C. Survey, A-51.

### Brown County

M. T. Anderson's No. 8 A. Leatherwood, 800 feet south and 200 feet west of the NE cor. of the W half of the south 143 acres of Section 11, Juan Delgado Survey No. 785. Humble Oil & Refining Co.'s No. 16 A. W. Armstrong, 607 feet south and 1,209 feet west of the NE cor. of Section 1, Juan Delgado Survey No. 785. Davis & Roark's No. 1 W. D. McCulley, 150 feet southeast of the northwest line and 150 feet northeast of the SW line of the northeast 30 acres of the northwest 100 acres of the W. D. McCulley 200-acre tract out of the John S. Thom Survey No. 53. Jordan Brothers' No. 1 T. A. Sears, 150 feet north and east of the SW cor. of the NW of the SW of the J. M. Ross Survey No. 610.

### Callahan County

D. Beams' No. 1 C. B. Snyder, 150 feet north and east of the SW cor. of the NW of the NW of Section 140, B.B. B.&C. Survey.

### Clay County

Mid-Continent Holding Co.'s No. 1 J. D. Stine and others-B, 1,367 feet south and 750 feet east of the NW cor. of Section 7, Parker County School Land, A-374, being 150 feet north and 750 feet east of the SW cor. of their 46-acre lease "B."

### Coke County

R. E. McCamey and others' No. 1 J. B. McCutcheon, 2,300 feet southwest of the northeast line and 785 feet northwest of the southeast line of the T. J. Hines Survey No. 4.

### Coleman County

John R. Foster's No. 2 M. T. Overall, 330 feet south and 600 feet west of the NE cor. of the SW of Section 71, Block 1, G.H.&H. Survey.

### Cooke County

The Texas Company's No. 1 A. J. Dennis, 861 feet north and 1,064 feet west of the SE cor. of the H. Wilkerson Survey, A-1,173, being 647 feet north and 150 feet west of the SE cor. of their 80-acre lease.

### Crane County

Gulf Production Co.'s No. 7 W. N. Waddell, 330 feet east of the middle of the west line of Section 10, Block B-23, Public School Land.

### Foard County

Bass & Dillard and others' No. 1 M. Phillips, 660 feet north and west of the SE cor. of the NW of Section 276, Block A, H.&T.C. Survey.

### Garza County

Emerald Oil Co.'s No. 1 J. S. Reed, 330 feet north and 990 feet west of the SE cor. of Section 135, Block 5, H.&G.N. Survey.

### Howard County

Marland Production Co.'s No. 8 H. B. Clay, 330 feet south and west of the NE cor. of Section 155, Block 29, W.&N.W. R.R. Survey. Same company's No. 9

*"Just as it leaves the mill."*

**Every reputable maker of pipe takes pride in his product—rigid tests, close inspection, assures the buyer of a perfected product—of sharp, accurate, clean threads.**

**Why, then all the trouble, delays, and rethreading necessary when the pipe reaches you?**

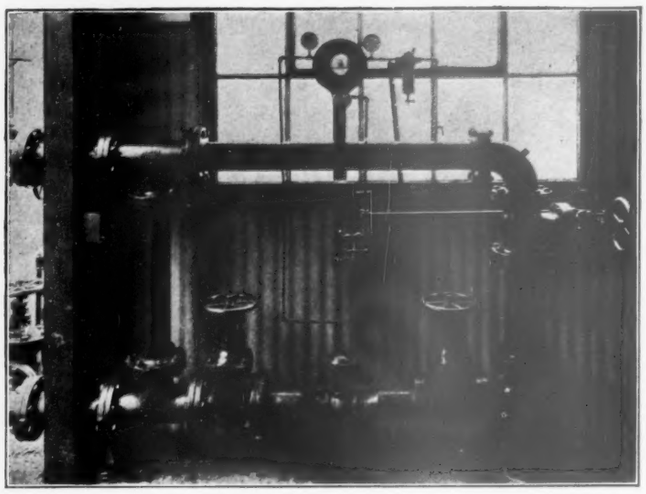
**The logical thing to do is to protect the pipe and couplings so that the ends and threads are perfect—keep out all the dirt and sand—*and that is just what Colona Thread Protectors do*—the pipe reaches you *just as it left the mill*—**

**COLONA MANUFACTURING COMPANY**
**Pittsburgh, Penna.**

***Specify this added service—you are entitled to perfect pipe, and Colona is available to every manufacturer.***

**(Patented)**

PIPE THREAD
COLONA
PROTECTORS



*Tycos Steam Boiler Gas Fuel Governor (Pilot Operated), maintaining constant steam header pressures in natural gasoline power plant by regulating the gas supply to the battery of boilers.*

# *Tycos* Steam Boiler Gas Fuel Governor
## (Pilot Operated)

THIS installation insures constant steam pressures under varying load conditions by properly regulating the gas fuel supply to the burners. Full steam pressures are maintained under extreme operating conditions, thus insuring a high efficiency and consistent operation of the boiler plant.

An increase in steam consumption or tendency toward a drop in boiler pressure immediately reacts through the regulator to further open the diaphragm valve in the gas supply line, to such a position as is necessary to maintain constant steam pressures under this new condition; a decrease in steam consumption, or tendency toward an increase in boiler pressure likewise immediately re-acts to throttle down on the diaphragm valve to meet this more limited fuel requirement. More gas is admitted or the supply is throttled down as the load increases or decreases.

With the Tycos installation shown above the operator has complete information before him as to the pressures he is controlling, and the exact action of the control valve.

*Write today for further information on this installation.*

*Taylor Instrument Companies*
ROCHESTER, N. Y., U. S. A.

Canadian Plant, *Tycos* Bldg., Toronto
Manufacturing Distributors in Great Britain:
Short & Mason, Ltd., London

**Tycos**
**Temperature Instruments**
**Indicating Recording Controlling**

H. R. Clay, 330 feet north and east of the SW cor. of Section 139, Block 29, W.&N.W.R.R. Survey.

**Jack County**

Security Drilling Co.'s No. 1 H. C. Shanafelt, 330 feet south and 950 feet east of the NW cor. of the H. C. Shanafelt 285-acre tract out of the Isaac Hughson Survey, A-256, being 330 feet south and west of the NE cor. of their 80-acre lease. B. J. Shaw's No. 1 J. M. and W. E. Fox, 200 feet south and 750 feet west of the NE cor. of the J. M. and W. E. Fox 160-acre tract out of the Isaac Hughson Survey, A-256, being 200 feet south and east of the NE cor. of his 60-acre lease.

**Jones County**

W. G. Clark and others' No. 1 F. M. Collins, 330 feet south and east of the NW cor. of Section 29, Block 18, T.&P. Phillips Petroleum Co.'s No. 1 P. L. Walters, 990 feet south and 330 feet west of the NE cor. of the north 80 acres of the P. L. Walters 106-acre tract (shown as W. L. Phillips) out of Section 16, Block 19, T.&P.

**Mitchell County**

McGinley & Seigler's No. 1 W. T. Scott, at the C NE SW of Section 36, Block 17, S.P.R.R.

**Pecos County**

S. Kitts and others' No. 1 M. A. Sherbino, 330 feet south and 990 feet east of the NW cor. of Section 52, Block C-4, G.C.&S.F. Tidal Oil Co.'s No. 1 University Land, 1,320 feet north and east of the SW cor. of Section 16, Block 20, University Land. R. E. Moore's No. 1 R. W. Arnold, 1,320 feet north and 660 feet west of the SE cor. of Section 18, Block 1, H.&T.C.

**Shackelford County**

Grisham-Hunter Corp.'s No. 1 W. Y. and R. A. Davis-A, 150 feet north and west of the SE cor. of the NE of the NE of Section 16, Block 14, T.&P. F. W. Holder and others' No. 1 L. C. Huskey, 150 feet northwest of the southeast line and 2,030 feet northeast of the southwest line of Section 527, T.E.&L. Texas Consolidated Oil Co.'s No. 1 I. N. Jackson, 150 feet south and west of the NE cor. of the E half of the NW of Section 95, Block 12, T.&P.

**Stephens County**

Mook-Texas Oil Co.'s No. 7 L. D. Head, 1,825 feet south and 150 feet west of the NE cor. of the NW of Section 31, Block 6, T.&P.

**Throckmorton County**

H. Hobbs' No. 1 W. E. Cathey, 150 feet north and east of the SW cor. of Section 225, B.B.B.&C.

**Wichita County**

Magnolia Petroleum Co.'s No. 142 Hugh Reilley, 1,225 feet north and 1,320 feet west of the NE cor. of the J. B. Johnson Survey A-169 and located in the L. C. Denison Survey A-55. Comas Oil Co. and Prairie Oil & Gas Co.'s No. 6 M. P. Bishop, 475 feet north and 150 feet west of the SE cor. of the M. P. Bishop tract out of the L. Netherly Survey A-240. Petroleum Investment Co.'s No. 1 J. A. Fisher-B, 1,100 feet north and 250 feet east of the SW cor. of Lot 2, J. A. Fisher Subdivision, Section 24, H.&G.N., A-399. Same company's No. 4 J. A. Fisher-B, 193 feet north and 422 feet east of the SW cor. of Lot 2, J. A. Fisher Subdivision, Section 24, H.&G.N., A-399. Same company's No. 4 J. A. Fisher-B, 193 feet north and 422 feet east of the SW cor. of Lot 2, J. A. Fisher Subdivision, Section 24, H.&G.N., A-399. Same company's No. 5 J. A. Fisher-B, 150 feet north and 577 feet east of the SW cor. of Lot 2, J. A. Fisher Subdivision, Section 24, H.&G.N., A-399. Same company's No. 6 J. A. Fisher-B, 434 feet north and 577 feet east of the SW cor. of Lot 2, J. A. Fisher Subdivision, Section 24, H.&G.N., A-399. Same company's No. 7 J. A. Fisher-B, 434 feet north and 880 feet east of the SW cor. of Lot 2, J. A. Fisher Subdivision, Section 24, H.&G.N., A-399. Petroleum Investment Co.'s No. 8 J. A. Fisher-B, 155 feet north and 744 feet east of the SW cor. of Lot 2, J. A. Fisher Subdivision, Section 24, H.&G.N., A-399. Same company's No. 9 J. A. Fisher-B, 150 feet north and 250 feet east of the SW cor. of Lot 2, J. A. Fisher Subdivision, Section 24, H.&G.N., A-399. Riner & Bailey's No. 1 Nora Michie-B, 150 feet north and 450 feet east of the SW cor. of the Nora Michie 104.8-acre tract out of the L. Netherly Survey A-240. The Tulsa Oil Co.'s No. 1 C. F. Ancell, 205 feet south and west of the NE cor. of Section 7, Block 7, H.&T.C.

**Wilbarger County**

Empire Gas & Fuel Co.'s No. 8 W. T. Waggoner-B, 1,339 feet north and 203 feet east of the SW cor. of Section 32, Block 4, H.&T.C. Same company's No. 2 W. T. Waggoner-C, 205 feet north and east of the SW cor. of the SE of the NW of Section 25, Block 4, H.&T.C. Same company's No. 3 W. T. Waggoner-C, 203 feet south and east of the NW cor. of Section 25, Block 4, H.&T.C. Phillips Petroleum Co.'s No. 2 W. T. Waggoner-S, 195 feet north and east of the SW cor. of the SE of Section 45, Block 4, H.&T.C.

**Winkler County**

Humble Oil & Refining Co.'s No. 11 T. G. Hendricks-C (No. 2), 1,980 feet south and 1,325 feet east of the NW cor. of Section 10, Block B-12, School Land. Southern Crude Oil Purchasing Co.'s No. 32 T. G. Hendricks T-88-M, 1,760 feet south and 990 feet west of the NE cor. of Section 33, Block 26, School Land. Same company's No. 6 T. G. Hendricks T-88-N, 1,320 feet north and west of the SE cor. of Section 28, Block 26, School Land. Same company's No. 7 T. G. Hendricks T-88-N, 1,320 feet north and 2,640 feet west of the SE cor. of Section 28, Block 26, School Land.

**Young County**

L. G. Bradstreet Co.'s No. 8 L. A. Snider, 1,350 feet south and 150 feet east of the NW cor. of the Robert Wilson Survey A-1,276. L. G. Bradstreet and others' No. 1 O. W. Mathews, 150 feet north and west of the SE cor. of the O. W. Mathews 730.6-acre tract out of the A. Rohus Survey A-240. Brashear & Peacock's No. 1 W. W. Gregg-B, 150 feet north and west of the SE cor. of the west 60 acres of Section 17, Young County School Land, A-1,284. O. Bratcher's No. 6 J. C. C. Edwards, 750 feet south and 1,050 feet west of the NE cor. of the J. C. C. Edwards 100-acre tract out of the S. Tynes Survey A-274. Bratcher & Riggs' No. 1 J. C. C. Edwards, 783 feet north and east of the SW cor. of the J. C. C. Edwards, 100-acre tract out of the S. Tynes Survey A-274. Tom Casey's No. 2 S. Bagley, 850 feet northwest of the southeast line and 721 feet southwest of the northeast line of the northwest 80 acres of the S. Bagley 100-acre tract out of the P. Averett Survey A-2. Continental Oil Co.'s No. 6 R. Campbell-B, 1,400 feet south and 200 feet east of the NW cor. of Section 1,390, T.E.&L. Kimbrell & Lyles' No. 2 E. Dyer, 150 feet north and east of the SW cor. of the W. W. Stroud Survey A-1,707. Pennell and others' No. 4 R. J. Calvin, 150 feet south and 450 feet west of the NE cor. of the R. J. Calvin 200-acre tract out of the A. Rohus Survey A-240. Roberson Drilling Co.'s No. 3 F. M. Gillmore, 450 feet south and 720 feet east of the NW cor. of Section 14, Young County School Land, A-1,284. The Texas Co.'s M. W. Petty, 225 feet north and 450 feet west of the SE cor. of the north 100 acres of the west 210 acres of Section 1, B.B.B.&C., A-35. C. C. Williams' No. 1 G. P. Stewart, 450 feet north and 1,268 feet east of the SW cor. of the G. P. Stewart 120-acre tract out of the S. Tynes Sur. A-274.

**Corrections**

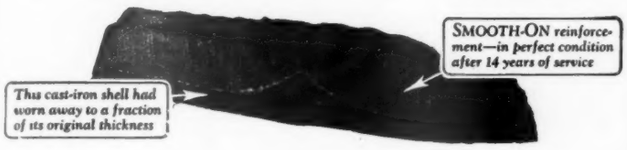
In Callahan County: Humble Oil & Refining Co.'s No. 2 Head Brothers-A, 1,174 feet south and 200 feet west of the most northerly NE cor. of Section 29, T.&P.

In Moore County: Barnsdall Oil Co.'s No. 1 Etta Harrison, 330 feet south and west of the NE cor. of the S half of the NE of Section 5, Block B-2, G. Gober Survey.

In Taylor County: Root Drilling Co.'s No. 1 Lon Martin, 1,650 feet north and 990 feet east of the SW cor. of Section 30, Block 19, T.&P.

In Wichita County: Underwood & Fanger's No. 1 Mrs. L. Morgan, 200 feet north and 1,600 feet west of the SE cor. of Section 1, C.T.R.R., A-46. Panhandle

## SMOOTH-ON added 14 years to the life of a condenser shell


SMOOTH-ON reinforcement—in perfect condition after 14 years of service
This cast-iron shell had worn away to a fraction of its original thickness

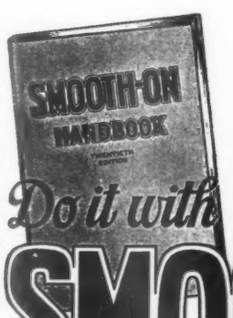
CORROSION caused by the chemical action and flow of impure circulating water thinned this portion of the shell of a 7,000-sq. ft. surface condenser to hardly more than a third of its original thickness. Finally in 1914 a crack developed and leakage started.

The Chief Engineer of the plant, which provides power to one of America's largest shipyards, built up the weakened internal surface with Smooth-On No. 2, and kept the condenser in continuous service for 14 years. Due to plant changes at the end of this period, the condenser was then abandoned. On final dis-assembling and inspection the Engineer was so astonished at the hardness of the Smooth-On No. 2 patch, the tight adhesion to the original metal and the way the Smooth-On had resisted further corrosion, that he sawed out the above section and presented it to us. The dividing line between the Smooth-On No. 2 on top and the remaining original metal below is clearly shown in the photo. As near as one can judge from appearance, no corrosion developed upon the exposed Smooth-On surface, which took on and retained an outer protective coating.

In addition to its exceptional ability to resist corrosion, solidified Smooth-On No. 2 has the peculiar characteristics of becoming appreciably denser and harder and bonding tighter as it ages. A Smooth-On No. 2 reinforcement of the type shown therefore becomes *stronger* instead of *weaker* after long service.

Smooth-On No. 2 prevents or stops pressure and fluid leaks at cracks, breaks, joints and porous spots, etc., and where judiciously applied will do its work perfectly. A Smooth-On repair or joint costs the least in lost time, labor and material, and is dependable. Try Smooth-On No. 2 *first*, and you will usually save the far greater cost of welding, hot riveting or new parts.

*Get Smooth-On No. 2 in 1 or 5-lb. can, or 25, 50 or 100-lb. keg from your nearest dealer or if necessary direct from us.*

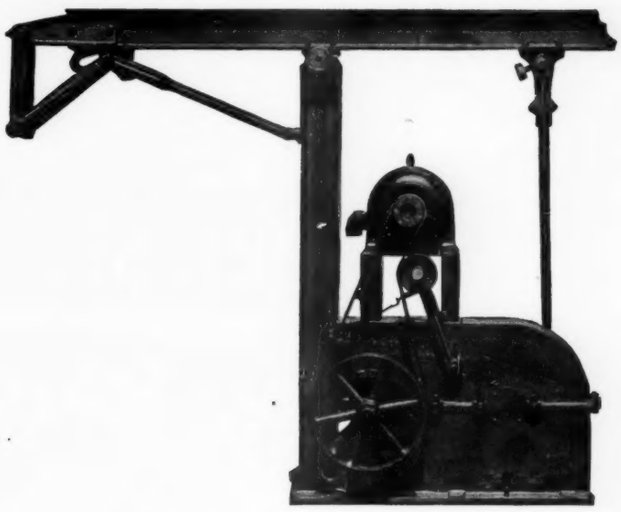



THE SMOOTH-ON HANDBOOK FREE
**if you mail the coupon**

**Twentieth Edition—Completely rewritten—136 pages of new data—193 diagrams, pictures and practical hints on at least 200 different uses for SMOOTH-ON. Every progressive engineer should have this book—get your copy NOW.**

*Do it with*
# SMOOTH-ON

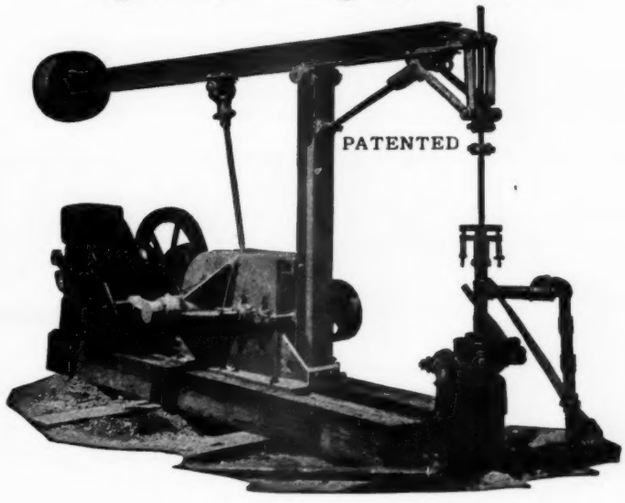
SMOOTH-ON MFG. CO.
**Dept. 66, 570 Communipaw Ave., Jersey City, N. J.**
Please send copy of the *Smooth-On Handbook*, 20th Edition.
Name .....
Address .....
.....
4-18-29



# Mechanically Correct Oil Well Pumping Powers

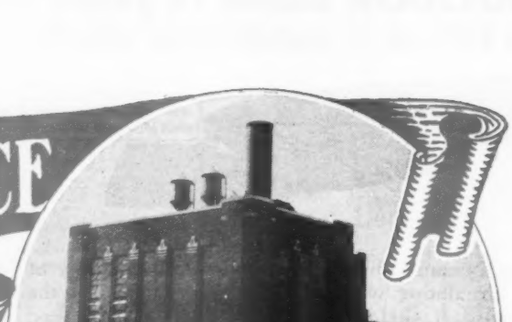
Fabricated with "H" Beam for Sampson Post and Walking Beam.
Toggle made from steel casting.
Interchangeable bronze bearings throughout.
Cut gears running in oil.
Patented cam motion keeps polish rod in alignment at all times.
Can be used to pump from one to three wells.

## Stork Engineering Company
**Saginaw, Michigan, U. S. A.**



# MORE SERVICE for West Texas

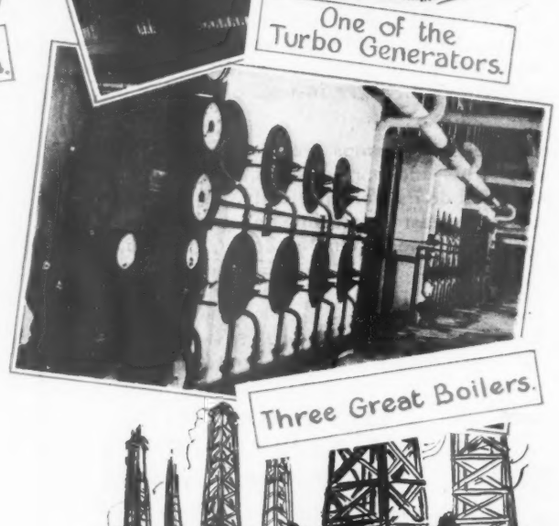
## views from Generating Station LAKE PAULINE



20,000 H.P. Generating Station.

Auxiliary Switch Room.

One of the Turbo Generators.



Three Great Boilers.

WITH THE COMPLETION of this new 20,000 horsepower generating station, five miles southeast of Quanah, the available capacity of the West Texas Utilities Company was increased to 70,000 horsepower.

*—with 2,000 miles of high tension lines in actual service*

*—carrying dependable POWER to 108 communities, in 42 of the most productive counties in West Texas*

**and Providing—**

—enough reserve power to serve at least half-a-hundred MORE communities in this rich Land of Opportunity.

## WEST TEXAS UTILITIES COMPANY

*In the Land of Opportunity*

Refining Co. and Ven-Mex Oil Co.'s No. 1 T. L. Burnett and others, 150 feet north and 1,130 feet east of the NW cor. of the G.C.&S.F. Survey No. 2, A-772, being 150 feet north and 750 feet west of the SE cor. of their lease out of the S.A.&M.G. Survey No. 6, A-464. Same company's No. 2 T. L. Burnett and others, 150 feet north and 830 feet east of NW cor. of the G.C.&S.F. Survey No. 2, A-772, being 150 feet north and 1,050 feet west of the SE cor. of their lease out of the S.A.&M.G. Survey No. 6,A-464. Same company's No. 3 T. L. Burnett and others, 150 feet north and 1,430 feet east of the NW cor. of the G.C.&S.F. Survey No. 2, A-772, being 150 feet north and 450 feet west of the SE cor. of their lease out of the S.A.&M.G. Survey No. 6, A-464. Same company's No. 4 T. L. Burnett and others, 150 feet north and 1,730 feet east of the NW cor. of the G.C.&S.F. Survey No. 2, A-772, being 150 feet north and west of the SE cor. of their lease out of the S.A.&M.G. Survey No. 6, A-464. Same company's No. 5 T. L. Burnett and others, 450 feet north and 1,730 feet east of the NW cor. of the G.C.&S.F. Survey No. 2, A-772, being 450 feet north and 150 feet west of the SE cor. of their lease out of the S.A.&M.G. Survey No. 6, A-464. Same company's No. 6 T. L. Burnett and others, 537 feet north and 1,130 feet east of the NW cor. of the G.C.&S.F. Survey No. 2, A-772, being 537 feet north and 750 feet west of the SE cor. of their lease out of the S.A.&M.G. Survey No. 6, A-464. H. Hines' No. 1 T. L. Burnett and others-A, 450 feet north and 2,030 feet east of the NW cor. of the G.C.&S.F. Survey No. 2, A-772, being 450 feet north and 150 feet east of the SW cor. of his lease out of the S.A.&M.G. Survey No. 6, A-464. Petroleum Investment Co.'s No. 3 J. A. Fisher-B, 498 feet north and 49 feet east of the SW cor. of the J. A. Fisher Subdivision, Section 24, H.&G.N., A-399. Petroleum Investment Co.'s No. 2 J. A. Fisher-B, 150 feet north and 121 feet east of the SW cor. of Lot 2, J. A. Fisher Subdivision, Section 24, H.&G.N., A-399.

In Young County: Brashear & Peacock's No. 1 W. W. Gregg-A, 150 feet north and 150 feet east of the SW cor. of the east 100 acres of Section 17, Young County School Land, A-1,284.

## HANDLING SULPHUR CRUDE IN REFINERIES

(Continued from Page 164)

tins, safety posters and verbal propaganda:

1. The handling of sulphur crudes from tank cars through the pumps to storage entails some hazards due to leaking valves, packing glands and fittings; also the gases present in tank cars and storage tanks at hatches and gauge wells. Therefore, the operators at the loading rack, pump houses, and all gaugers were warned regarding the possibility of coming in contact with hydrogen sulphide gas in such locations.

2. Pipefitters are warned to be cautious when hooking up bottom connections of cars preparatory to unloading.

3. Unloaders are warned to be cautious when removing dome covers. The discharge valve must be opened, as there is generally an accumulation of $H_2S$ between the oil level and tank car top, which has been liberated from the crude while in transit.

4. Employes are instructed not to stand on the side of any opening where escaping gas will blow towards them.

5. Gaugers and sample carries are especially warned to keep to the windward side of gauge and thief holes.

6. When gauging or taking samples at any place where it is known that hydrogen sulphide gas is supposed to be present, or the ordinary symptoms are noticeable, a hose mask or acid canister mask must be worn.

7. Wherever possible, the hose mask, equipped with a blower, must be used, the precautions should be taken to make certain that the blower is placed in gas free air, preferably on the windward side of the source of gas.

8. Steam aspirators were installed in the look boxes to discharge all gases and vapors into the atmosphere.

**Warning Employes**

9. Employes are warned to exercise care when working in or around equipment that is being or has been, used for the running of Panhandle or West Texas crudes and pressure distillates. No one should try to determine the presence of $H_2S$ by its odor. For example, when it is necessary to enter a tank that has been used for storage of such crudes or pressure distillates, a test of the air in the tank must be made to ascertain if $H_2S$ is present. If the test indicates presence of $H_2S$, the employe must put on a hose mask before entering the tank.

10. Lead acetate paper is used to determine whether or not $H_2S$ is present in all tanks and stills before employes are permitted to enter and work in such tanks and stills.

11. Frequent tests with lead acetate paper are conducted in and around the various units running sulphur crudes.

12. All P. D. rundown tanks are equipped with gauge glasses, which extend the full height of the tanks, also sample clocks; this makes it unnecessary to go on top of such tanks to obtain gauges or samples.

13. All traps, sewer boxes, catch basins, blowoff pits and separators are tested for $H_2S$ before workmen are permitted to work in such places.

14. When floating roof tanks are in service, employes are forbidden to go down on the tops of floating roof tanks, unless they are equipped with a gas mask, and a fellow worker is stationed at the top of the ladder or stairway to render assistance to the man on the roof if necessary.

15. When cleaning or repairing tanks, employes are required to observe the following safe practices:

a. All lines shall be disconnected and blinded to prevent leaky valves or fittings admitting dangerous gases to the tank.

b. All manhole covers shall be removed to permit free circulation of air.

c. All tanks shall be steamed until gas free before any work is started, and a steam or air aspirator located in the upper manhole shall be operating at all times when work is being done on or inside of tanks.

d. Before entering or working upon tanks three independent bottle explosion tests, or laboratory tests, shall be made by a competent person to determine the hazards, if any, from inflammable mixtures. This procedure shall be repeated periodically as the air conditions may change often during the day; due to heat, agitating of tank bottoms, etc.

e. Lead acetate paper shall be used to determine the possible presence of hydrogen sulphide, or petroleum gases, and if any marked degree of discoloration is noticed, workmen shall not enter until further steaming of the tank removes the hazard. These tests shall be made periodically at short intervals, until the work within the tank has been completed.

f. Men entering tanks which are to be cleaned shall be equipped with a hose mask of the blower type, also a life belt and line. The blower, which furnishes the air to the masks, must be located in pure air, preferably to the windward side of the tank.

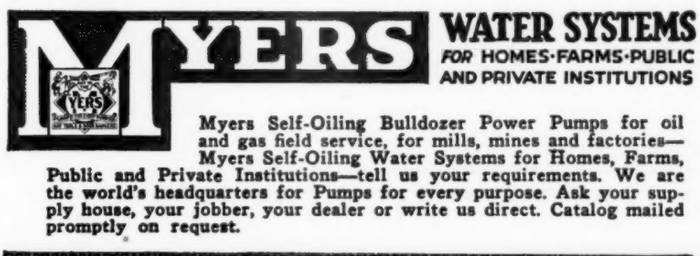
All operators, and approximately 50 per cent of the balance of the refinery force, have received instructions in the Schaefer method of artificial respiration and use of the H. H. inhalator. These instructions are given to approximately 10 per cent of the operating and maintenance employes every two months; instructions being given to different groups each time.

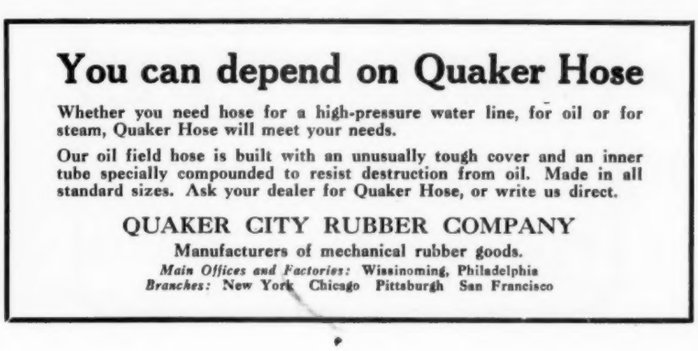
Two portable H. H. inhalators and one hospital H. H. inhalator are kept available and ready for use at all times to resuscitate anyone who may have come in contact with the gas and was overcome.

It is felt that a considerable amount of educational work, as well as practical application of precautionary measures, should be carried out. When one considers the serious hazards which might

Gott
Water Cans & Coolers
Built to last... you will always be assured of a fresh supply of pure water, when you have a GOTT Water Cooler. Order one now from your supply store.
GOTT Water Cans 1½ gal; 3 gal; 5 gal; and 10 gal.
GOTT Water Coolers 3 gal; 5 gal; 8 gal; 10 gal; and 20 gal.
Gotkool
H. P. GOTT MFG. CO. • Winfield, Kansas
KEEP PURE DRINKING WATER ALWAYS HANDY

Simplex Jacks
for Oil Field Service and
Every Type of Industry
including Utilities·Railways·Mining·Contractors·
Pole Pulling·Pipe Pushing·Cable Reel Jacks·
Simplex Screw Jacks - with the Visible Screw.
Distinctive in Man Power, Safety & Simplicity.
At your Supply House
Templeton, Kenly & Co., Chicago, U.S.A.
The World's Largest Manufacturers of Jacks
Simplex Jacks are "Aces"
SIMPLEX


MYERS
WATER SYSTEMS
FOR HOMES·FARMS·PUBLIC AND PRIVATE INSTITUTIONS
Myers Self-Oiling Bulldozer Power Pumps for oil and gas field service, for mills, mines and factories—Myers Self-Oiling Water Systems for Homes, Farms, Public and Private Institutions—tell us your requirements. We are the world's headquarters for Pumps for every purpose. Ask your supply house, your jobber, your dealer or write us direct. Catalog mailed promptly on request.
THE F.E.MYERS & BRO.CO. Ashland, Ohio
ASHLAND PUMP AND HAY TOOL WORKS


You can depend on Quaker Hose
Whether you need hose for a high-pressure water line, for oil or for steam, Quaker Hose will meet your needs.
Our oil field hose is built with an unusually tough cover and an inner tube specially compounded to resist destruction from oil. Made in all standard sizes. Ask your dealer for Quaker Hose, or write us direct.
QUAKER CITY RUBBER COMPANY
Manufacturers of mechanical rubber goods.
Main Offices and Factories: Wissinoming, Philadelphia
Branches: New York Chicago Pittsburgh San Francisco

# RYERSON

IMMEDIATE SHIPMENT FROM STOCK

Bars, Plates, Rivets, Tool Steel, Shapes, Sheets, Bolts, Welding Rods, Structurals, Tubes, Wire, Concrete, Reinforcing, Rails, Pipe, Turnbuckles, Alloy Steel, Ascoloy, Small Tools, Machine Tools, etc.

*Write for the Ryerson Journal and Stock List.*

JOSEPH T. RYERSON & SON INC.

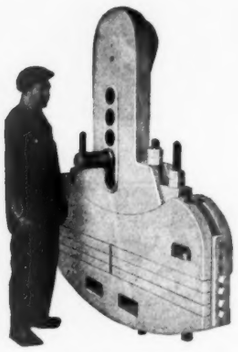
Chicago Milwaukee St. Louis Cincinnati Cleveland
Detroit Buffalo New York Boston

Tulsa Office: 410 Atlas Life Bldg.

STEEL

Houston Office: D. S. Mair 220 Main Street





OCS

Crank Type Equalizer.
The Balance for
Deep Well Pumping

See our Ad April 4.

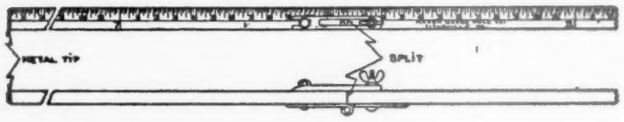
THE OIL COUNTRY SPECIALTIES MFG. CO.

COFFEYVILLE, KANSAS



GAUGE POLES

Any Length For Oil Measurements




"MARSH-JOINT"

For sale by oil country supply houses or furnished promptly by the factory at Titusville, Pa.

Correspondence Solicited

MARSH GAUGE POLE COMPANY
TITUSVILLE, PA.



*A Meter for Every Kind of Service*

EMCO - IRONCLAD
WESTINGHOUSE

GAS METERS

*Also manufacturers of Gas Regulators*

PITTSBURGH EQUITABLE METER CO.
PITTSBURGH, PA.


exist if these measures were not taken, it is very obvious that the effort is not only well worth while but is imperative. The cases of injury resulting from this hazard have been very few and in each case an object lesson has been brought out to strengthen the existing regulations for the avoidance of recurrences.

## TELLS HOW NEW PAINT AIDED GASOLINE SALES

(Continued from Page 162)

age of gasoline sales for the last six months of 1928 was 78 per cent above the last six months of 1927."

The station attendants themselves showed an overnight change in morale, and a surprisingly rapid grasp of principles of politeness after Holliday entered the presidency by way of the legal counselors' office. He had no prejudices and one chief idea—that the key to management was the industrial relations department. He started schools for employes, proceeding on the theory that a man will go further, providing his own momentum, than he will if somebody kicks him.

The station at Carnegie Avenue and East Eighty-ninth Street is a training school. There are seven others in town. The men are taught how to tip their hats, how to smile, how to keep books, how to sell their product, how to grease cars. They're taken to the refinery and shown how their gasoline is made. The result has been a tremendous increase in the esprit de corps.

* * *

Holliday wrote for the "president's page" of the Sohioan: "There is a sound analogy between a business organization and a football team. The president and his staff are like the head coach and his coaching staff. . . . Every player must learn how to play his own position. He must also be taught the relation of his own position to the other positions and the team play."

Holliday, who in his youth aspired to drive a horse car, doesn't play bridge or golf and with "the time saved," enjoys conversation, reading, swimming and horseback riding.

"Conversation probably comes first." said this very human president of a great corporation, who threw purple paint at the worthy citizens of Cleveland and made 'em like it.

## TOURISTS' SERVICE BUREAU ISSUES MAPS

(Continued from Page 162)

moved into the company's headquarters' building at 26 Broadway.

In the first year of its existence there, the bureau, aside from distributing maps to automobilists who called for them, answered 14,000 mail inquiries from motorists regarding routes, road conditions, etc. In the following year, the total increased to 67,000 inquiries, reached 87,000 last year, and is expected to top the 125,000 mark this year. While the service bureau is maintained by the Standard Oil Co. of New York, it also distributes maps, upon request, issued by Standard Oil Co. of New Jersey, Standard Oil Co. of Kentucky, Standard Oil Co. of Louisiana, Standard Oil Co. of Pennsylvania, and Magnolia Petroleum Co., covering the territories of the respective companies. Last year, a force of 40 persons was required to handle the volume of the tourists' bureau office, and this year it is expected that more than 50 will be needed. The work of the New York company has proved so successful as a builder of good will that the Standard Oil Co. of Louisiana will shortly open a similar bureau in New Orleans, and Standard Oil Co. of Kentucky will establish a tourists' information bureau in Louisville. The volume of service of this nature required in the other territories, however, is not expected to approach that of the New York company, which has more than twice as many automobiles registered in its home territory as Standard Oil Co. of New Jersey has in its field.

Some idea of the magnitude of the


STRAIGHT HOLES

Through Inclined Strata

The ordinary string of tools being smaller than the hole, are easily sidetracked in drilling inclined strata, thus starting a crooked hole.

The JAQUES Forged Steel Drilling Connection fills the hole and guides the bit, but allows the mud to pass through the opening between the wings; thus not only correcting but PREVENTING CROOKED HOLES.

Note these features of the JAQUES Connection:

1—Prevents crooked holes.
2—Lessens jar breakage.
3—Cleans hole for bailer.
4—Allows more than one screw before running bailer.
5—Prevents cutting of the drilling cable.
6—Eliminates the possible cave-in.
7—Undue wall friction eliminated.
8—Reduces the whipping of drill cable.
9—Tools always in the center of the hole for fishing.
10—Gives the tools a rotary motion, preventing key-seating.

JAQUES Drilling Connections are made from the solid under 2,000 - ton hydraulic forging press, and are guaranteed free from welds.

*Manufactured exclusively by*

TITUSVILLE FORGE COMPANY
Titusville, Penn.

*Distributed by*

THE CONTINENTAL SUPPLY COMPANY
St. Louis, Mo.
THE CONTINENTAL WELL SUPPLY CO.
74 Trinity Court, New York
OIL WELL SUPPLY CO.
Pittsburgh, Pa.

JAQUES CONNECTIONS

# ASCO STEEL

## STANDS SUPREME
## In the Oil and Gas Fields

Our metallurgists are men who have had first hand experience in the Oil Fields. They have studied the performance of Oil Well Tools under the most trying conditions. Asco Steel is being produced to meet these conditions and the increasing demand has proven all that we claimed for it.

DISTRICT OFFICES

541 McCormick Bldg., Chicago, Ills.

503 Philtower Bldg., Tulsa, Okla.

THE ANDREWS STEEL CO.

NEWPORT ASCO KENTUCKY

## 2 miles a day across Alberta

Greenspon's gas line pipe took root in new soil on this job—out at Calgary, Alberta, Canada, where a Canadian natural gas company saved money in buying, and time in installing, Greenspon's Odee pipe. ODEE is always uniform—thoroughly inspected; ends cut square and beveled for perfect joints; prices that really save money. Delivery is always prompt. For any gas or oil pipe or casing requirements, *write, wire, or phone for quotations.*

**Jos. GREENSPON'S Sons**
**IRON & STEEL COMPANY**

ST. LOUIS TULSA BORGER, TEXAS NEW YORK CITY WHEATLAND, PA.

O-4

## FABRICATED PIPING

**Power Piping**

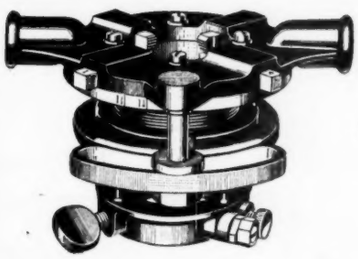
Many intricate jobs of special design must be made for oil field requirements. This class of work can be safely entrusted to us for fabrication.

*Let Our Engineers Help You—Write!*

POWER PIPING Co. PITTSBURGH



**Buy Self-Contained BEAVERS**
***Always ready to use-No loose parts***



No. 11—1″ to 2″
PLAIN
No. 11-A—1″ to 2″
RATCHET

## Detourless Die Stocks

No. 11 and 11-A Beavers take the straight smooth road to perfect leak-proof threads—no detours such as hunting for or changing lost or misplaced parts. Simply set the dies to size and the tool is ready. No loose bushings either. The most accurate and simple pipe centering device ever made eliminates loose bushings. Everything in the tool ready to use when you pick it up. Referred to by users everywhere as the greatest improvement ever made in die stocks—light, easy working, simple, sturdy, durable and low in price.

*Sold by all Leading Supply Houses*

Mfd. by The Borden Co., Warren, Ohio

**BEAVER**

Time and Labor Saving Die Stocks, Pipe Cutters & Power Drives - ⅛" to 12"

# Stanley

## Solid Woven Cotton Belting

The extra strength in Triple Stanley gives it longer life on heavy work than Double. The Oil Man's Belt for the Oil Man's Jobs.

**Stanley Belting Corporation**

15 N. Jefferson St., Chicago
536 Lyons Ave., Irvington, N. J.
124 Adelaide St., W. Toronto, Ont., Canada
42A Southwark St., S. E. 1, London, England
Dallas Transfer & Terminal Warehouse Co., Dallas, Texas, PBX Phone 2-7113
c-o Tulsa Storage & Transfer Co. James T. Sullivan Tulsa, Okla. Tel. 4-0151
Pacific Coast Rubber Co., 51 Main St., San Francisco, Cal. 500 E. 3rd St., Los Angeles, Cal.

Made in Accordance with A.P.I. Specifications



# Oil Field Cordage

**Drilling Cables — Bull Ropes — Plain Laid**

Field Stocks Carried by

Murray Tool & Supply Co. Tulsa and Cleveland, Okla.
T. T. Word Supply Co. Houston, Tex.
Mid-Continent Supply Co. Fort Worth, Tex.
Pelican Well Tool & Supply Co., Shreveport, La.
H. E. Mitchell, Wichita, Kans.
McJunkin Supply Co., Charleston, W. Va.

Geo. W. McLean, Jr., Mid-Continent Sales Manager
222 East Brady St., Tulsa, Okla.



# FOMON FIRE OUT

AMERICAN FOMON COMPANY

Specialists in Fire Protection to the Oil Industry

Drexel Building, Philadelphia, Pa.

St. Louis Tulsa San Francisco

BRANCH OFFICES:
NEW YORK, N. Y. R.525,165 BROADWAY
LOS ANGELES, CALIF. 420 E. THIRD ST.
CHICAGO, ILL. 1615 FIRST NATL. BANK BLDG.
TULSA, OKLA. Mid-Continent Bldg.

THE AMERICAN WELL WORKS

General Offices AURORA, ILLINOIS and Factory



# Many Businesses

have been built by the use of consistent classified advertising. Keep your ad running regularly. The results are accumulative.

*Classified Wants Department*

The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING


preparation and distribution of 5,000,000 road maps within the space of a year is given when it is considered that more than 300,000 pounds of wood pulp are required for the production of the paper to be used in these maps. More than six months is required for the various operations in the production of this paper, approximately 15,850,000 gallons of water being used in the pulp processing. In its finished form, eight freight cars of paper are required for the production of the 5,000,000 maps.

In replying to mail inquiries for road directions, etc., Standard Oil Co. of New York uses a form letter, which reads:

"In response to your recent request for road information we are sending the road maps necessary to cover your proposed trip.

"On these maps, which are issued by the Standard Oil Co. of New York or have been obtained for you through the courtesy of other companies, we have indicated in gray crayon what in our opinion are the best roads for you to follow.

"A study of the legends on these maps will provide a key to additional information about your route and will further help you if you wish to make any side trips or variations in the route we have suggested. Everywhere along the way you will find the men at the filling stations ready to assist you not only with gas and oil requirements but with local information."

There is sufficient space at the bottom of the form letter for the company's tourists bureau to fill in detailed data regarding road conditions or any other information of the sort which will be found helpful to tourists.

All replies are sent along with the maps requested by the motorists, the letter being mailed in a special compartment on the face of the map envelope, the letter carrying first class letter postage, and the map third or fourth class postage.

The inquiries are received not only from points in Standard Oil Co. of New York territory, but come from all other parts of the United States as well. Each year, numerous inquiries are received from abroad, from the Hawaiian Islands, and from the Canal Zone, from persons contemplating motor trips to the New England States. In addition to the various sectional maps issued by the six companies named, Standard Oil Co. of New York distributes a map showing the principal highway routes of the United States, published by the General Drafting Co., Inc.

Standard Oil Co. of New York has been doing considerable advertising during the past few years designed to stimulate motoring in its territory. For the past year or so, its "Soconyland Sketches" have been a regular weekly feature over the large radio broadcasting stations of the East, and are believed to have done much to stimulate interest in the beauty and historical spots of New York and New England.

## CENTRAL WEST FIELDS

(Continued from Page 62)

1, Coal Township, and made a location for No. 1-3452 on the Nannie Shook & Co., Section 33, same township.

In Lawrence County, Elizabeth Township, the Southern Ohio Gas & Fuel Co. made a location on the Hanging Rock Iron Co.'s property, Section 30, which is a wildcat pure and simple.

In Guernsey County, Jackson Township, the Ohio Fuel Gas Co. is drilling No. 3-3478 on the Charles C. Wigginton, Section 15.

In Morgan County, Marion Township, the Ohio Fuel Gas Co. has a good gas well in No. 1-3415 on the T. M. Frisby, Section 23, in the lower Berea at from 1,606 to 1,632 feet, total depth 1,636 feet. Same company has an average gasser in No. 1-3447 on the F. J. Strode, Section 30, in the lower Berea at from 1,594 to 1,614 feet, total depth 1,620 feet. Same company's No. 1-2763 on the Hugh Ellis, Lot 4, same township, is a duster in the lower Berea at from 1,459 to 1,482 feet, total depth 1,490 feet. In Penn Township the same company is drilling No. 2-3506 on the John H. Snearly, Section

In Belmont County, Wheeling Tow ship, the Preston Oil Co.'s No. 7 Sa M. Henderson, Section 2, is rated g for 7 bbls. from the Berea sand at fr 1,677 to 1,685 feet. In Richland To ship, same county, Frank Stranges others' second test on the W. H. New Section 34, was dry in the Berea fr 1,873 to 1,888 feet and was drilled t total depth of 2,513 feet.

In Licking County, Fallsburg To ship, the Emerald Petroleum Co.'s t on the Jacob Weiss, Section 8, Falls Township, is credited with an initial p duction of 80 bbls. at from 2,800 to 2 feet. Same company's No. 4 John E. M tin, Section 10, same township, is ported at 12 bbls. In Hanover Towns the Hope Construction & Refining C No. 2 J. A. Griffin, Section 6, is lis good for 3 bbls. In Hopewell Towns same company's No. 2 on the N Coomes, Section 1, produced an initial 70 bbls. from 3,091 to 3,131 feet.

In Muskingum County, Jackson To ship, the Hope Construction & Refin Co.'s No. 5 W. E. Helphrey, Section produced an initial of 75 bbls. from 2 to 3,030 feet. Rymilper Oil Co.'s test the Harry E. Durto, in thirty-ninth qu ter section, Perry Township, was dry.

In Knox Township, Vinton Cou Townsend and others' No. 2 David H ton is a fairly nice gas well.

### INDIANA FIELD

Only one completion was reported f the Indiana fields, George W. Buff others' test, 50 feet from the north and 660 from the east line of the Ge W. Buff farm, in the SE of Section Gill Township, Sullivan County, with initial production of 5 bbls. from a t depth of 791 feet.

R. W. McMahan, of Owensboro, moved a drilling outfit to the Ter Weatherholt farm, offsetting the Stres well in Spencer County.

### ILLINOIS FIELD

Three dry holes out of four complet is the record of the Illinois fields s the last review. The producer was dr by Walter Squires and others in the cor. of the Marks and Kraft farm, in NE Section 1, Licking Township, Cr ford County, which produced 4 bbls. a depth of 1,000 feet, and was No. 5 the lease, with No. 6 drilling.

Smith and others drilled a dry hol the SW cor. of the I. B. Thompson fa in the SW Section 28, Dennison To ship, Lawrence County, at a depth 1,685 feet.

In the Allendale Field, Wabash To ship, Wabash County, the Highland O Gas Co.'s test, 200 feet from the s line and 400 from the west line of Sam Bailey, in the SW Section 4. duster at a depth of 1,585 feet. Ri and others got a duster 1,200 feet f the north line and 200 from the east of the Hannington heirs, in the NW tion 14, same township, at 1,589 Mount Carmel Oil Co. is starting N F. M. Leek, Section 1, same townshi

Whittenburg and others pulled out abandoned old No. 1 on the W. Hut son farm, Section 9, Centralia Towns Marion County.

## POSSIBILITIES OF OIL IN SAN RAFAEL SWE

WASHINGTON, D. C., Apr. 15.— Geological Survey reports that the Rafael swell, in the desert portion of central Utah between the Green Rive the east and Castle Valley on the wes a land of buttes and mesas and steep-sided canyons, with sparse scatt trees and desert shrubs that furnish carious support for a few herds of s in winter and bands of wild horses st ing between the few water holes in s mer. In this picturesque but inhospi country considerable amounts of ura and radium were mined in the year the World War, and shortly afterwa number of oil prospectors were attra to it. One of these prospectors su well near Woodside, at the north en the swell, which, while disappointin hopes of oil, found gas that prove analysis to contain notable quantiti helium, a valuable noninflamm

# UNDERWRITERS
*of*
# NATURAL GAS SECURITIES

*Inquiries Invited*

**ZWETSCH, HEINZELMANN & CO.**
**Inc.**

57 William Street New York, N.Y.

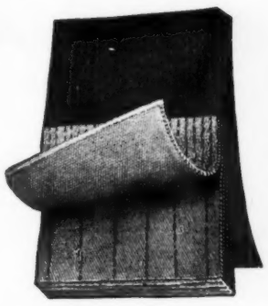


**FOR BEST RESULTS**
*use*
**PETROL PRODUCTS**

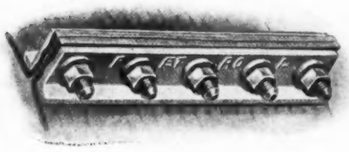
THE PETROL
ROTARY
BELT PUNCH

For accurate, easy and quick Punching of the Bolt Holes.

PETROL BELT
For Oil Well Drilling and Pumping



PETROL BELT CLAMPS
The most satisfactory clamp for joining Belting used in the oil fields.

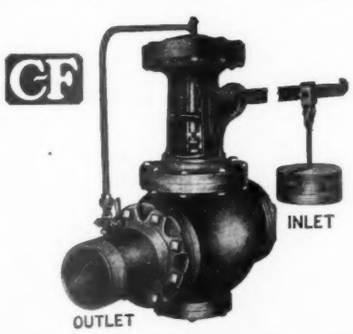


MANUFACTURERS
**VICTOR BALATA & TEXTILE BELTING CO.**
Main Sales Office: 38 Murray St., New York

CHICAGO OFFICE
345-359 W. AUSTIN AVE.

FACTORIES
EASTON, PA.






**THE FULTON THROTTLING REGULATOR**

The Fulton Throttling Regulator maintains a constant pressure under varying conditions of load.

The Regulator is placed in the suction line to the compressor and is controlled by the pressure at the discharge acting on the diaphragm surface, which is balanced by weight on the lever.

A tendency of the discharge pressure to rise overbalances the weight on the lever and the valve moves toward its seat, throttling the suction sufficiently to restore and maintain the discharge pressure at a fixed point.

**THE CHAPLIN-FULTON MFG. CO.**
*Manufacturers of Regulators for Industrial Gas Service*
28-40 Penn Ave., Pittsburgh, Pa.



# ROBINSON
## ORIFICE FITTINGS

*...fast eliminating the old style by-pass throughout the oil and gas industry!*

ISN'T it logical that a single unit which replaces many expensive and bulky items of equipment should become popular at once with progressive oil and gas men? That's exactly what the ROBINSON Orifice Fitting does and explains why there are over 11,500 in use today. Note in the illustration how compact the fitting is; how little space it occupies compared to an old style by-pass. Plate changing is simple; measurement accurate, and safety to men assured. Our new catalog offers the proof and gives the details. Send for it TODAY.

**ROBINSON ORIFICE FITTING COMPANY**
1435 SANTA FE AVENUE · LOS ANGELES, CALIFORNIA

"RUBSHELL"

Naphtha-Proof (A Super Paint) Acid-Proof

Solves the "Sour Stock" Corrosion Problem

Insoluble in gasoline vapor or liquid, "Rubshell" is invaluable for the internal protection of the bottoms and vapor space of run-down, working and storage tanks, being particularly effective in combating the more severe forms of corrosion resulting from the handling of "Sour Stocks." "Rubshell" being acid-proof also perfectly protects the exteriors of acid eggs, fume towers, and treating plants.

*SEND for your copy of "Further Proof" summarizing the experience of a score of refiners in combating "Sour Stock" corrosion.*

International Compositions Company, Inc. 25 BROADWAY NEW YORK, N. Y.

LUFKIN

"ATLAS" TAPE

Accurate — Extra Heavy

Tapes and rules for every measuring requirement of the oil industry.

THE LUFKIN RULE CO.

SAGINAW, MICH.
WINDSOR, CAN. NEW YORK

*Send for Catalog*

180 CRANE BRANCHES AND SALES OFFICES BLANKET THE WORLD

CRANE

BUY YOUR VALVES AND FITTINGS FROM THE CRANE BRANCH NEAR YOU

NATIONAL PETROLEUM ENGINEERING COMPANY

Engineers & Geologists

TULSA, OKLAHOMA

APPRAISALS
REPORTS-COMMERCIAL & TAX

SURVEYS
ESTIMATES OF OIL RESERVES

*AN EXPERIENCED OIL FIELD ORGANIZATION*

NUGENT

OIL FILTERS

*Oiling Systems*

*Oiling Devices*

408 N. HERMITAGE AVE.
CHICAGO U.S.A. ESTD. 1897

*Send for catalog*

STEEL PLATE CONSTRUCTION

Stills, Refinery equipment of every kind.
Steel Oil Storage Tanks, Condensers,
Fabricated and Erected

RITER-CONLEY COMPANY

General Offices—Pittsburgh, Pa.


buoyant for dirigible airships. In order to preserve this valuable gas for a possible emergency, the territory immediately surrounding the well was set aside by executive order as a reserve. Other wells were drilled farther south in the swell, but no helium or other gas nor petroleum was found in them.

A geologic investigation that covered an area of nearly 1,500 square miles, embracing about two-thirds of the swell, was recently made by the Geological Survey. According to the findings of this investigation wells which have been drilled, with the exception of the helium well near Woodside, were not so situated as to constitute conclusive tests of the oil possibilities of the territory. Although hopes of finding oil there are not high, the wells so far drilled by no means exclude the possibility.

The rocks exposed in the San Rafael swell embrace representatives of all the geologic periods between the Permian and the Upper Cretaceous. The Woodside well probably penetrated all these rocks, but as yet no well has adequately tested the older beds that lie beneath the Permian. In as much as the Pennsylvanian rocks have been shown to be oil-bearing near Moab, about 50 miles to the east, it is possible that they are also oil-bearing within the swell.

A report of this investigation has just been published by the Geological Survey as Bulletin 806-C. The parts of the report dealing with the stratigraphy should be of value to geologists and others engaged in the search for oil and gas in eastern Utah and of general interest to those engaged in the exploitation and development of the oil and gas resources of Utah and other states of the Colorado Plateau.

## EASTERN FIELDS

### WELLS COMPLETED

**VENANGO-CLARION**

| | |
|---|---|
| Cumming, C. B. Kern 6 | 1 |
| Melford, South Penn Oil 26 | 1 |
| Coast Riddle, Covert et al 2 | 1 |
| Stiles Tract 74, S. Y. Ramage acct. 2, 82 | 1 |
| Stiles Tract 74, S. Y. Ramage acct. 2, 83 | 1 |
| Hoffman, Double Watson et al 19 | 1 |
| Henderson, S. Y. Ramage jr. 50 | 2 |
| Wheildon, Exchange Bank & Trust Co. 20 | 2 |
| Dana, Cobb & Ladd 5 | 2 |
| Wright, Rice & Bone 1 | 1 |
| Wright, Rice & Bone 2 | 1 |
| Corbett & White, Corbett & White 12 | 1 |
| Schwab, J. E. Keverline 8 | 1 |
| McLaughlin, Fryburg Motor 3 | gas |
| McLaughlin, Thos. McLaughlin 15 | gas |
| Hoy, Oil Well Supply 119 | dry |
| Hoy, Oil Well Supply 120 | dry |
| McPherson, Minnie F. Nuhfer 12 | 1 |
| McMullen, B. Turner & Sons 9 | 1 |
| Clarion— | |
| Whitehill, Citizens Trust 13 | 1 |
| Stubler heirs, George Stubler acct. 2, 9 | 1 |
| Harkenrider, Harkenrider 1 | 1 |
| Beichner, N. T. Shorts et al | dry |
| Maggio Oil, Maggio Oil 3 | 3 |
| Alum Rock Gas, A. J. Keatley 1 | 2 |
| Alum Rock Gas, A. J. Keatley 2 | 3 |
| Hess, Alum Rock Gas 11 | 10 |
| Whitehill Bros., Whitehill Bros. 1 | dry |
| Meherten, F. C. Deemer 4 | 2 |
| Meherton, F. C. Deemer 5 | 2 |
| Edinger, Roy Edinger 4 | 1 |
| Keating heirs, Freeman, Dittman et al 4 | gas |
| Brown, Baden et al., S.E.O.W.&S.C. Jordan 4 | 2 |
| Wells completed | 33 |
| Production | 46 |
| Dry | 4 |
| Gas | 3 |

**BUTLER-ARMSTRONG**

| | |
|---|---|
| Montgomery, Beals & Freeman 1 | dry |
| Wagner, Frazier, Harmon et al 1 | gas |
| Noblock, J. E. Dufford 2 | dry |
| Blair & Stewart, Blair & Stewart 6 | 1 |
| Brady, A. Affolter | 1 |
| Snow, A. C. Snow | 6 |
| Robinson, Robinson & Berry | 1 |
| Wells completed | 7 |
| Production | 9 |
| Dry | 2 |
| Gas | 1 |

**LEGAL NOTICE**

OIL AND GAS MINING LEASES on allotted Indian land under the jurisdiction of the DEPARTMENT OF THE INTERIOR in Caddo, Comanche, Cotton and Stephens Counties, Oklahoma, covering 11,526.91 acres will be sold at Public Auction at the Kiowa Indian Agency, Anadarko, Oklahoma, on April 18, 1929. For full particulars and description of land, write to J. A. BUNTIN, DISTRICT SUPERINTENDENT IN CHARGE, KIOWA INDIAN AGENCY, ANADARKO, OKLAHOMA.


**'The Oil Man's Bible'**

The Oil and Gas Journal is the oldest petroleum publication in America and enjoys an excellent reputation gained by Truth, Character and Years of Reliability.

It intends to maintain forever that good will and trust by giving all the news every week honestly and with strict accuracy.

Keep reliably informed at all times by renewing your subscription promptly at expiration.

The OIL and GAS JOURNAL
Tulsa, Okla.

DIVIDEND NOTICE
Imperial Royalties Company

Established April, 1920

Will pay the usual monthly dividend of 1½% on its $1.00 par Preferred shares on April 30. This is dividend No. 103 and makes a total of 175% paid to Preferred shareholders. Also the usual monthly dividend of 1½ cents a share will be paid on its Class A Preferred Shares on April 30.

E. S. Horn, H. O. Bland, J. E. Horn, Trustees.
Hunt Bldg., Tulsa, Okla.

Air Line Mask

With or without Blower.

Mask and Blower in separate cases.

Safety Gas Main Stopper Co.

523 Atlantic Ave., Brooklyn, N. Y.

GEORGE STEINER
GEOLOGIST

Sole Representative of the original Eotvos Torsion Balances in America.

11 West 42nd St., New York, N. Y.

PATENTS *Write for Free Book*
MUNN & CO.
*Associated since 1846 with the Scientific American*

1551 Scientific American Building
24 West 40th Street, *New York City*
514 Scientific American Bldg., *Washington, D.C.*
1303 Tower Building, *Chicago, Ill.*
656 Hobart Building, *San Francisco, Cal.*
511 Van Nuys Building, *Los Angeles, Cal.*

ARTHUR C. BROWN
SOLICITOR OF UNITED STATES AND FOREIGN PATENTS
406-412 KENNEDY BLDG.
Tulsa, Okla.
Mr. Fred Krueger in Charge
Phone 4-2319

Chester W. Washburne
*Geologist and Engineer*
27 William St., N. Y.

TEXAS OIL MAPS
County and District Catalog on Application
HEYDRICK MAPPING COMPANY
Wichita Falls, Texas

# *Covered Completely*

There was just one topic among oil men during the past two weeks, the conferences at Washington about curtailment. The daily press reports summarized the news but omitted vitally important details of the proceedings that oil men wanted to know. Above all, the industry was eager to know what the leaders thought of the situation and what the next step would be at Washington and on the part of the industry.

All this information was covered completely in The Oil and Gas Journal through its Washington and New York bureaus and interviews with President Reeser in Tulsa and Chairman Holmes in New York, information not available to the industry from any other source.

Congratulating The Oil and Gas Journal on the completeness with which every aspect of the subject was treated in last week's issue a leader of the industry said:

"But it was only what we have become accustomed to expect from The Journal."

**Keep in Touch by Using This Coupon**

**ORDER BLANK**
**The Oil and Gas Journal, Tulsa, Okla.**

You are hereby directed to mail The Oil and Gas Journal to me for .....year. Enclosed find remittance $.....

Classify my interests as checked by me.

.....Production .....Refining

.....Equipment .....Marketing

.....Transportation

Name .....

Address .....

City .....

| U. S. OR MEXICO | |
|---|---|
| One Year | $6.00 |
| Six Months | 3.00 |
| Three Months | 2.00 |
| FOREIGN | 7.00 |

# Oklahoma-Kansas and Eastern Pipe Line Report

**OKLAHOMA-KANSAS**
**Pipe Line Statement for February**

**Runs**

| Company— | Month bbls. | Dly. av. bbls. |
|---|---|---|
| Prairie P. L. Co.* | 4,284,000 | 153,000 |
| Gulf P. L. Co. | 1,544,164 | 55,149 |
| Texas P. L. Co. | 920,370 | 32,870 |
| Magnolia P. L. Co. | 2,056,003 | 73,429 |
| Empire P. L. Co. | 1,354,625 | 48,379 |
| Cosden P. L. Co. | 691,576 | 24,699 |
| Sinclair P. L. Co. | 2,954,000 | 105,500 |
| Oklahoma P. L. Co. | 3,237,835 | 115,637 |
| Other lines* | 5,936,000 | 212,000 |
| Total February | 22,978,583 | 820,663 |
| Total January | 25,279,954 | 815,482 |
| Difference | 2,301,271 | 5,181 |

**Shipments**

| | | |
|---|---|---|
| Prairie P. L. Co.† | 5,203,883 | 185,853 |
| Gulf P. L. Co. | 1,491,730 | 53,276 |
| Texas P. L. Co. | 1,023,646 | 36,559 |
| Magnolia Pet. Co. | 1,839,486 | 65,696 |
| Empire P. L. Co. | 1,159,106 | 41,397 |
| Cosden P. L. Co. | 863,456 | 30,838 |
| Sinclair P. L. Co.* | 2,944,675 | 105,167 |
| Oklahoma P. L. Co. | 3,028,990 | 108,178 |
| Other lines* | 5,796,000 | 207,000 |
| Total February | 23,350,972 | 833,964 |
| Total January | 26,246,896 | 846,675 |
| Difference | 2,895,924 | 12,711 |

**Stocks**

| | Bbls. |
|---|---|
| Prairie O. & G. Co.* | 35,288,000 |
| Gulf P. L. and Gypsy Oil Cos. | 9,560,420 |
| The Texas Company | 8,296,567 |
| Magnolia Pet. Co. | 9,781,060 |
| Empire P. L. Co. | 4,491,239 |
| Mid-Continent Pet. Corp. | 3,323,897 |
| Sinclair Crude Oil Pur. Co.* | 20,697,000 |
| Carter Oil Co. | 12,519,259 |
| Oklahoma P. L. Co. | 3,354,338 |
| Other lines* | 11,825,000 |
| Total February | 119,111,780 |
| Total January | 118,283,049 |
| Difference | 828,731 |

*Estimated. †Prairie Pipe Line and Sinclair Pipe Line shipments include Texas crude oil.

Note—Stocks do not include approximately 7,900,000 bbls. of crude oil held in storage on private tank farms and leases.

**EASTERN PIPE LINE REPORT**

**Runs from Wells**

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for January and February:

| | Jan., 1929 | Feb., 1929 |
|---|---|---|
| Nat. Transit | 136,672.42 | 133,165.29 |
| S. W. Pa. P. L. | 99,615.87 | 88,660.70 |
| Eureka P. L. | 352,729.30 | 308,930.88 |
| Buckeye P. L. (Macksburg) | 330,659.13 | 298,720.53 |
| Buckeye P. L. (Cleveland) | 11,137.67 | 10,466.65 |
| Buckeye P. L. (Lima, etc.) | 90,382.06 | 81,725.70 |
| Indiana P. L. | 4,133.22 | 3,645.21 |
| Cumberland P. L. | 195,655.99 | 173,139.79 |
| N. Y. Transit | 26,987.20 | 25,714.25 |
| Tidewater P. L. | 201,809.34 | 188,664.86 |
| Pure Oil | 63,975.76 | 55,790.43 |
| Emery P. L. | 64,263.32 | 59,159.57 |
| Paragon Dev. | 17,882.64 | 16,717.79 |
| Stoll Oil | 8,337.71 | 6,833.00 |
| Total | 1,604,241.63 | 1,451,334.95 |
| Daily average | 51,749.73 | 51,833.39 |

Note—Indian Refining Co. also reported other receipts of 276,018.71 bbls. Paragon Refining Co. had other receipts of 153,894.94 bbls. Paragon Development had other receipts of 372.84 bbls.

**Petroleum Deliveries**

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, and Kentucky for January and February:

| | Jan., 1929 | Feb., 1929 |
|---|---|---|
| Nat. Transit | 572,124.61 | 385,191.81 |
| S. W. Pa. P. L. | 438,318.41 | 334,454.56 |
| Eureka P. L. | 223,981.34 | 203,870.95 |
| Buckeye P. L. (Macksburg) | 193,196.90 | 161,417.11 |
| Buckeye P. L. (Cleveland) | 2,667.94 | 1,932.85 |
| Buckeye P. L. (Lima, etc.) | 1,292,954.24 | 1,100,029.84 |
| Indiana P. L. | 1,426,599.14 | 1,288,564.76 |
| Cumberland P. L. | 175,926.75 | 129,595.90 |
| Southern P. L. | | 78,401.44 |
| N. Y. Transit | 188,973.27 | 133,227.78 |
| Northern P. L. | 131,681.47 | 154,522.76 |
| Tidewater P. L. | 164,335.93 | 191,990.86 |
| Pure Oil | 60,320.01 | 58,985.39 |
| Emery P. L. | 58,403.16 | 69,672.20 |
| Paragon Ref. | 188,650.77 | 153,894.94 |
| Paragon Dev. | 19,225.73 | 17,084.90 |
| Total | 5,137,359.67 | 4,462,838.05 |
| Daily average | 165,721.28 | 159,387.06 |

Note—Indian Refining Co. reported other deliveries of 291,227.63 bbls.

**Gross Stocks**

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of January and February:

| | Jan., 1929 | Feb., 1929 |
|---|---|---|
| Nat. Transit | 812,449.58 | 779,918.51 |
| S. W. Pa. P. L. | 405,706.51 | 473,848.71 |
| Eureka P. L. | 1,186,389.33 | 1,154,081.70 |
| Buckeye P. L. (Macksburg) | 539,030.90 | 533,780.16 |
| Buckeye P. L. (Cleveland) | 58,406.82 | 39,875.08 |
| Buckeye P. L. (Lima, etc.) | 2,223,198.38 | 2,114,370.56 |
| Indiana P. L. | 520,629.71 | 521,024.63 |
| Cumberland P. L. | 527,107.30 | 573,102.52 |
| Southern P. L. | 531,254.68 | 446,321.17 |
| N. Y. Transit | 265,636.20 | 286,204.16 |
| Northern P. L. | 389,493.68 | 401,642.64 |
| Tidewater P. L. | | 1,303,959.46 |
| Pure Oil | 16,499.34 | 14,136.77 |
| Emery P. L. | 19,132.04 | 8,672.52 |
| Paragon Ref. | 21,287.75 | 21,124.63 |
| Indian Ref. | 74,153.69 | 60,203.15 |
| Paragon Dev. | 6,187.72 | 6,568.59 |
| Total | 7,596,563.63 | 8,738,834.96 |
| Increase | 57,008.46 | 1,142,271.33 |

**Grades of Oil**

The following table shows the amount of the different grades of oil held by the Eastern pipe lines at the close of January and February showing the gross stocks of the above fields:

| | Jan., 1929 | Feb., 1929 |
|---|---|---|
| Pennsylvania | 2,988,208.30 | 3,246,721.38 |
| Lima | 696,840.58 | 659,187.62 |
| Kentucky | 755,304.30 | 747,383.60 |
| Mid-Continent | 3,070,290.16 | 3,810,386.65 |
| Illinois | 85,920.29 | 275,155.71 |
| Total | 7,596,563.63 | 8,738,834.96 |

**Daily Average Runs**

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

| | 1926 | 1927 | 1928 | 1929 |
|---|---|---|---|---|
| January | 55,630 | 56,209 | 52,904 | 51,749 |
| February | 60,394 | 61,298 | 57,002 | 51,833 |
| March | 61,644 | 63,247 | 57,485 | ..... |
| April | 63,019 | 60,927 | 56,812 | ..... |
| May | 60,580 | 60,284 | 62,067 | ..... |
| June | 61,121 | 62,757 | 58,230 | ..... |
| July | 63,206 | 58,874 | 57,144 | ..... |
| August | 61,815 | 60,870 | 57,745 | ..... |
| September | 64,639 | 60,285 | 53,487 | ..... |
| October | 161,132 | 147,080 | 58,100 | ..... |
| November | 67,774 | 57,275 | 53,565 | ..... |
| December | 58,755 | 53,089 | 52,025 | ..... |

**Daily Average Shipments**

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

| | 1926 | 1927 | 1928 | 1929 |
|---|---|---|---|---|
| January | 156,056 | 141,227 | 146,465 | 165,721 |
| February | 159,488 | 138,534 | 167,368 | 159,387 |
| March | 150,239 | 133,777 | 158,883 | ..... |
| April | 152,374 | 140,227 | 172,935 | ..... |
| May | 160,998 | 144,594 | 180,559 | ..... |
| June | 160,257 | 149,772 | 188,024 | ..... |
| July | 160,045 | 151,850 | 189,470 | ..... |
| August | 151,929 | 188,653 | 192,853 | ..... |
| September | 158,915 | 144,213 | 194,138 | ..... |
| October | 161,132 | 147,036 | 176,000 | ..... |
| November | 172,608 | 150,975 | 176,898 | ..... |
| December | 136,428 | 144,504 | 173,572 | ..... |

**Gross Stocks**

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

| | 1927 | 1928 | 1929 |
|---|---|---|---|
| January | 9,718,008 | 12,276,710 | 7,596,564 |
| February | 10,119,162 | 12,180,419 | 8,738,835 |
| March | 10,794,044 | 12,239,725 | ..... |
| April | 11,112,295 | 11,740,125 | ..... |
| May | 11,359,381 | 11,602,468 | ..... |
| June | 11,493,673 | 11,287,678 | ..... |
| July | 11,458,128 | 10,819,331 | ..... |
| August | 11,989,115 | 10,236,743 | ..... |
| September | 12,212,716 | 9,660,910 | ..... |
| October | 12,047,661 | 9,229,709 | ..... |
| November | 11,939,740 | 8,366,553 | ..... |
| December | 12,340,297 | 7,539,555 | ..... |

**Franklin Pipe Line Co.**

The following table exhibits the condition of the Franklin Pipe Line Co. at the close of business for the months named and not counted in the stocks and averages reported above:

| 1928— | Runs | Shipments | Stocks |
|---|---|---|---|
| February | 2,460.14 | 3,109.34 | 21,170.79 |
| March | 2,578.86 | 5,540.33 | 20,209.32 |
| June | 3,153.08 | 2,779.02 | 17,922.58 |
| July | 2,902.50 | 3,628.02 | 17,197.06 |
| August | 2,874.11 | 2,350.13 | 17,721.04 |
| September | 2,820.31 | 5,255.42 | 15,285.93 |
| October | 1,289.93 | 538.89 | 17,551.93 |
| November | 2,663.53 | 788.47 | 19,426.99 |
| December | 3,053.60 | 3,167.53 | 19,426.99 |
| 1929— | | | |
| January | 2,099.90 | ..... | 19,313.06 |

**The Illinois Field**

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

| | |
|---|---|
| Gross stocks, March 1 | 2,312,433.71 |
| Runs from wells | 494,767.30 |
| Other receipts | 305,630.41 |
| Regular deliveries | 460,858.05 |
| Other deliveries | 330,189.62 |

The amount of Illinois oil run by the Tidewater Pipe Line Co. in February was 22,562.87 bbls. Deliveries were 42,524.65 bbls. Adding these figures to those of the Illinoise Pipe Line Co. makes the runs and deliveries as follows:

| 1928— | Runs | Deliveries |
|---|---|---|
| March | 725,250.82 | 520,595.69 |
| April | 526,013.13 | 448,282.44 |
| May | 632,968.64 | 522,980.51 |
| June | 608,552.49 | 625,087.33 |
| July | 612,286.49 | 565,678.37 |
| August | 639,074.85 | 671,864.02 |
| September | 570,307.91 | 737,293.50 |
| October | 626,147.64 | 626,290.40 |
| November | 576,332.88 | 702,589.93 |
| December | 584,633.00 | 491,517.26 |
| 1929— | | |
| January | 570,727.38 | 545,084.66 |
| February | 517,330.17 | 503,387.70 |

Tidewater Pipe Co., Ltd., also delivered in February, 132,675.31 bbls. Oklahoma oil.

## AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

| Average bbls. per day— | ATLANTIC PORTS Baltimore | Boston | New York | Philadelphia | Others | Total | GULF COAST PORTS Galveston | New Orleans Port Arthur Baton Rouge Sabine Pass | Tampa | Total | Total all ports |
|---|---|---|---|---|---|---|---|---|---|---|---|
| September | 11,100 | ..... | 18,967 | 38,200 | 6,700 | 74,967 | ..... | ..... | ..... | ..... | 74,967 |
| October | 17,323 | ..... | 11,807 | 6,483 | ..... | ..... | ..... | ..... | ..... | ..... | 35,613 |
| November | 21,333 | 5,200 | 25,400 | 18,200 | 7,100 | 77,233 | ..... | ..... | ..... | 1,000 | 78,233 |
| December | 4,968 | 2,968 | 24,678 | 18,806 | 3,064 | 54,484 | ..... | ..... | ..... | 2,419 | 56,903 |
| January | 15,838 | ..... | 16,676 | 11,838 | 7,938 | 52,290 | ..... | ..... | ..... | 5,161 | 57,451 |
| February | 14,214 | ..... | 38,750 | 17,250 | 11,607 | 81,821 | ..... | ..... | ..... | 3,750 | 85,571 |

## AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

| Average bbls. per day— | ATLANTIC PORTS Baltimore | Boston | New York | Philadelphia | Others | Total | GULF COAST PORTS Galveston | New Orleans Port Arthur Baton Rouge Sabine Pass | Tampa | Total | Total all ports |
|---|---|---|---|---|---|---|---|---|---|---|---|
| September | 22,933 | 19,100 | 110,467 | 30,700 | 14,333 | 197,533 | 6,367 | 41,300 | 6,333 | 1,667 | 55,667 | 253,200 |
| October | 20,161 | 16,839 | 128,452 | 27,710 | 7,098 | 200,258 | ..... | 32,226 | 3,065 | 1,612 | 36,903 | 237,161 |
| November | 18,400 | 16,033 | 133,700 | 30,267 | 8,433 | 206,833 | 1,333 | 37,167 | 4,633 | ..... | 43,133 | 249,966 |
| December | 15,419 | 15,968 | 140,871 | 42,323 | 8,709 | 223,290 | 2,903 | 35,129 | 2,355 | ..... | 40,387 | 263,677 |
| January | 11,936 | 8,903 | 130,065 | 34,871 | 15,709 | 201,484 | ..... | 34,808 | 4,098 | 1,287 | 40,193 | 241,677 |
| February | 13,750 | 15,071 | 135,179 | 32,750 | 17,893 | 214,643 | ..... | 34,357 | 821 | 143 | 35,321 | 249,964 |

## GROSS PRODUCTION IN UNITED STATES FOR 12 MONTHS

(In barrels of 42 gallons)

| 1928— | | California | Oklahoma | Texas | Kansas | Arkansas | Louisiana | Rocky Mts. | Eastern | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| March: | Month | 19,118,324 | 20,162,524 | 21,542,865 | 3,379,031 | 2,687,948 | 1,866,106 | 2,401,911 | 3,522,000 | 74,680,709 |
| | Daily average | 616,720 | 650,404 | 694,931 | 109,001 | 86,708 | 60,197 | 77,481 | 113,613 | 2,409,055 |
| April: | Month | 18,280,729 | 19,096,920 | 21,876,913 | 3,412,260 | 2,472,600 | 1,912,187 | 2,370,810 | 3,231,000 | 72,653,419 |
| | Daily average | 609,357 | 636,564 | 729,230 | 113,742 | 82,420 | 63,740 | 79,027 | 107,700 | 2,421,786 |
| May: | Month | 19,331,866 | 19,443,355 | 21,220,046 | 3,367,809 | 2,843,847 | 1,926,026 | 2,525,043 | 3,619,000 | 74,276,992 |
| | Daily average | 623,609 | 627,205 | 684,518 | 108,639 | 91,737 | 62,130 | 81,447 | 116,742 | 2,396,032 |
| June: | Month | 19,164,244 | 18,482,981 | 19,877,936 | 3,202,050 | 3,075,911 | 2,074,422 | 2,425,470 | 3,401,000 | 71,704,014 |
| | Daily average | 638,808 | 616,099 | 662,598 | 106,735 | 102,530 | 69,147 | 80,849 | 113,367 | 2,390,134 |
| July: | Month | 19,754,458 | 18,809,188 | 22,055,737 | 3,171,548 | 2,792,139 | 2,238,090 | 2,492,586 | 3,487,000 | 74,800,746 |
| | Daily average | 637,241 | 606,748 | 711,475 | 102,308 | 90,069 | 72,131 | 80,406 | 112,484 | 2,412,927 |
| August: | Month | 19,444,899 | 20,840,804 | 22,339,131 | 3,147,058 | 2,711,787 | 1,989,264 | 2,561,840 | 3,556,000 | 76,590,783 |
| | Daily average | 627,255 | 672,284 | 720,448 | 101,518 | 87,477 | 64,170 | 82,640 | 114,709 | 2,470,670 |
| September: | Month | 18,908,169 | 22,456,860 | 21,554,269 | 3,047,250 | 2,540,070 | 1,830,225 | 2,432,430 | 3,229,000 | 75,998,273 |
| | Daily average | 630,272 | 748,562 | 718,207 | 101,575 | 84,669 | 61,007 | 81,047 | 104,300 | 2,533,279 |
| October: | Month | 19,430,992 | 23,431,071 | 22,176,853 | 3,058,460 | 2,652,484 | 1,836,221 | 2,571,822 | 3,612,000 | 78,769,903 |
| | Daily average | 626,806 | 755,841 | 715,376 | 98,660 | 85,564 | 59,233 | 82,962 | 116,516 | 2,540,964 |
| November: | Month | 19,907,526 | 22,078,680 | 20,791,798 | 2,977,800 | 2,476,080 | 1,801,914 | 2,388,870 | 3,348,000 | 75,770,668 |
| | Daily average | 663,584 | 735,956 | 693,059 | 99,260 | 82,536 | 60,064 | 79,629 | 111,600 | 2,605,689 |
| December: | Month | 21,574,703 | 22,425,722 | 22,180,102 | 2,988,400 | 2,521,571 | 1,846,841 | 2,289,040 | 3,581,000 | 79,407,379 |
| | Daily average | 695,958 | 723,410 | 715,487 | 96,400 | 81,341 | 59,576 | 73,840 | 115,516 | 2,561,528 |
| 1929— | | | | | | | | | | |
| January: | Month | 23,385,939 | 22,417,030 | 23,412,192 | 2,861,641 | 2,453,526 | 1,807,887 | 2,076,070 | 3,379,000 | 81,793,285 |
| | Daily average | 754,385 | 723,130 | 755,232 | 92,311 | 79,146 | 58,318 | 66,970 | 109,000 | 2,638,493 |
| February: | Month | 22,300,707 | 20,448,764 | 20,816,209 | 2,529,968 | 2,154,194 | 1,569,930 | 1,965,656 | 3,122,000 | 74,907,428 |
| | Daily average | 796,454 | 730,313 | 743,434 | 91,356 | 76,936 | 56,068 | 70,202 | 111,500 | 2,676,265 |
| | Total 12 months | 240,602,556 | 250,093,899 | 259,844,051 | 37,143,275 | 31,382,157 | 22,699,113 | 28,501,548 | 41,087,000 | 911,353,599 |
| | Daily average | 659,185 | 685,189 | 711,902 | 101,762 | 85,979 | 62,189 | 78,068 | 112,567 | 2,496,859 |

sday,

nd the
Penn-
ds, in-
at the
three

1929
596,564
738,835

ndition
e close
nd not
eported

Stocks
1,170.79
0,209.32
7,922.58
7,197.06
7,721.04
5,285.93
7,551.93
9,426.99
9,426.99

9,313.06

port of

2,433.71
4,767.30
5,630.41
0,858.05
0,189.62
by the
ry was
35 bbls.
he Illi-
nd de-

liveries
0,595.69
8,282.44
2,980.51
5,087.33
5,678.37
1,864.02
7,293.50
6,290.40
2,589.93
1,517.26

5,084.66
3,387.70
elivered
a oil.

Total
ll ports
74,967
25,613
78,233
56,903
57,451
85,571

Total
ll ports
253,200
237,161
249,966
263,677
241,677
249,964

Total
,680,709
,409,055
,653,419
,421,786
,276,992
,396,032
,704,014
,390,134
,800,746
,412,927
,590,783
,470,670
,998,273
,533,279
,769,903
,540,964
,770,668
,505,689
,407,379
,561,528

,793,285
,638,492
,907,428
,676,263

,353,599
,496,859